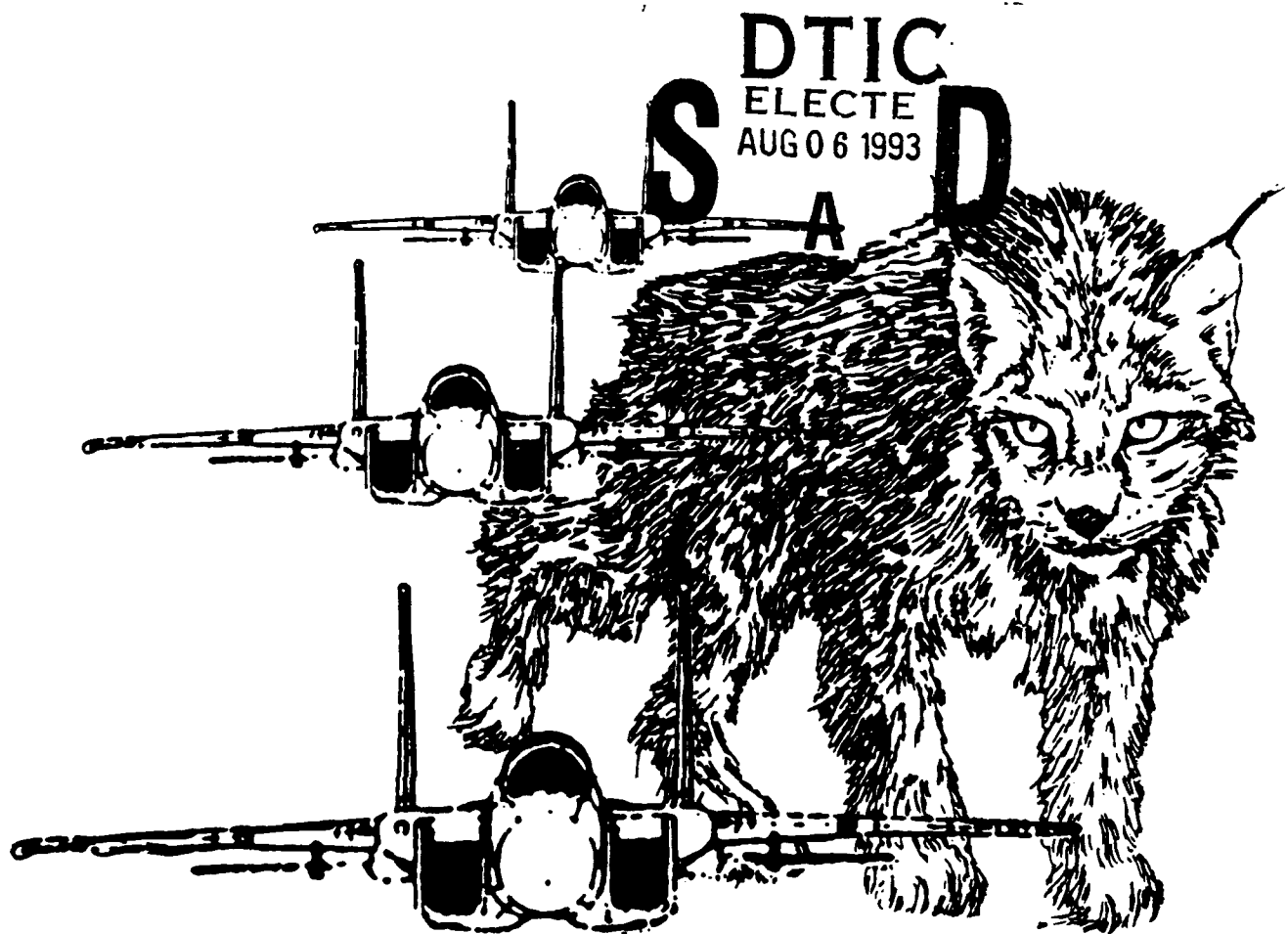


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**Socioeconomic Assessment of the  
Proposed Inactivation of the  
5th Fighter Interceptor Squadron  
Minot Air Force Base, North Dakota**



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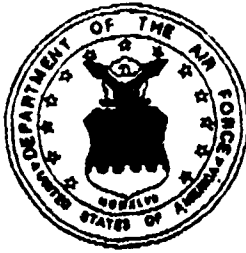


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**Socioeconomic Assessment of the Proposed Inactivation  
of the 5th Fighter Interceptor Squadron  
Minot Air Force Base, North Dakota**

September 1987

Prepared for

**UNITED STATES AIR FORCE**  
Interagency Agreement; DOE No. 1489-1489-A1,  
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Prepared by

**Oak Ridge National Laboratory**  
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## **List of Acronyms**

<b>ACC</b>	<b>Cost Branch of the 91st Comptroller Squadron</b>
<b>AFB</b>	<b>Air Force Base</b>
<b>ALCM</b>	<b>Air Launch Cruise Missile</b>
<b>BOS</b>	<b>Base Operating Support</b>
<b>BX</b>	<b>Base Exchange</b>
<b>CHAMPUS</b>	<b>Civilian Health and Medical Program of the Uniformed Services</b>
<b>EIR</b>	<b>Economic Impact Region</b>
<b>ERIS</b>	<b>Economic Resource Impact Statement</b>
<b>5th FIS</b>	<b>5th Fighter Interceptor Squadron</b>
<b>GPD</b>	<b>Gallons per Day</b>
<b>MCP</b>	<b>Military Construction Program</b>
<b>MFH</b>	<b>Military Family Housing</b>
<b>PEC</b>	<b>Program Element Codes</b>
<b>PPE</b>	<b>Primary Program Element</b>
<b>SAC</b>	<b>Strategic Air Command</b>
<b>SACMET</b>	<b>Detachment 8, 3904 Management Engineering Squadron</b>
<b>SATAF</b>	<b>Site Activation Task Force</b>
<b>TAC</b>	<b>Tactical Air Command</b>
<b>TDY</b>	<b>Temporary Duty</b>
<b>TFS</b>	<b>Tactical Fighter Squadron</b>

## **EXECUTIVE SUMMARY**

### **PURPOSE**

This assessment examines the potential socioeconomic impacts of inactivating the 5th Fighter Interceptor Squadron (FIS) at Minot Air Force Base (AFB), North Dakota. The study focuses on employment, population, and income impacts and estimates their effects on housing, community services, utilities, transportation, recreation and tourism, and public finance. This assessment is intended primarily for the use of Air Force and community planners concerned with the local consequences of the inactivation.

### **ORGANIZATION OF THE SOCIOECONOMIC ANALYSIS**

#### **1. Introduction**

The introduction defines the five-county economic impact region (Bottineau, McHenry, Mountrail, Renville, and Ward counties) expected to be affected by the proposed action. A socioeconomic overview of the region is included in this section, and key data sources, assumptions, and a methodological outline are presented.

#### **2. Description of the Action**

This section describes the purpose and the need as set forth in the U.S. Air Force's Description of the Proposed Action and Alternatives. It is concluded that inactivating the 5th FIS is the only viable action which allows congressionally mandated budget cuts to be made without impairing combat readiness.

#### **3. Description of Baseline Socioeconomic Conditions**

The current condition of each of the specific socioeconomic areas is described in this section. The region is generally characterized by slow economic decline and population loss. This condition may improve with an upturn in prices for agricultural and petroleum products, but the region will remain dependent on Minot AFB expenditures. This dependency is strongest for Ward County and the city of Minot.

#### **4. Socioeconomic Impacts of Inactivation the 5th Fighter Interceptor Squadron**

This section provides a detailed description of the socioeconomic impacts of the action in relation to baseline conditions. Given the relatively small communities near the base, special emphasis is placed on assessing population, housing, and education impacts -- the areas in which the proposed action would have the most visible effects.



## **5. Socioeconomic Impacts of the Air Launch Cruise Missile Mission**

This section briefly explains the socioeconomic impacts that would accompany deployment of the Air Launch Cruise Missile (ALCM) at Minot AFB. The payroll and procurement expenditures associated with the ALCM will partially offset the losses in the region due to the inactivation of the 5th FIS.

## **6. Conclusions**

This section briefly summarizes the major findings of the study and mentions new activities which would partially offset the proposed action.

### **SUMMARY OF FINDINGS**

The inactivation of the 5th FIS would have a negative socioeconomic impact on the five-county region. It would affect 630 base-related employees, and reduce direct expenditures in the region by \$7.5 million.

The total population affected would be an estimated 1,731 persons, or 1.9 percent of the population in the region. Regional employment would decline slightly with a loss of 106 secondary jobs, less than 1 percent of the total. Annual gross income, including civilian and military pay, would be reduced by 3.6 percent, or \$19.8 million. Assuming that secondary workers leave the region, 531 housing units, or 1.5 percent of the total housing stock, would be vacated.

Regional population, income, and employment impacts would contribute to the economic decline the Minot area is already experiencing. Impacts on education and housing would be more pronounced for Ward County and the city of Minot. The proposed inactivation would reduce the number of children attending Minot public schools by 241 and reduce state and federal impact aid funds by \$656,654, or 3.9 percent of the 1986 total. The Ward County housing market would lose 417 households directly related to the base, 65 of whom own their own homes. Listing these homes for sale would increase the number of houses available by 13 percent - an increase likely to exert considerable downward pressure on prices in the absence of any change in demand. The 106 secondary workers displaced by the proposed action might also leave, bringing the total number of families leaving Ward County to 517. The increase in housing vacancies and the loss of students would have, respectively, negative impacts on real estate values and education revenues in the Minot area.

The negative impacts of the inactivation of the 5th FIS would be partially offset by the Air Launch Cruise Missile (ALCM) squadron recently assigned to Minot. This action will add 113 assigned and 20 base operating support staff members. The Site Activation Task Force (SATAF) team responsible for phasing in the ALCM mission will contribute an additional 25 members through 1989. Direct payroll and procurement expenditures will total an estimated \$1.8 million (\$1986) annually, and an estimated 27 secondary jobs will be created. The ALCM mission would increase demand on the local housing market by approximately 52 households and would add an estimated 73 children to local school districts.

## **1.0 INTRODUCTION**

### **1.1 DESCRIPTION OF THE ECONOMIC IMPACT REGION**

The economic impact region (EIR) of the proposed inactivation is the five-county area of North Dakota shown in Figure 1-1. The five counties -- Bottineau, McHenry, Mountrail, Renville, and Ward -- fall within a 50-mile radius of Minot Air Force Base (AFB). This is a functional economic area assumed to be circumscribed by the farthest practical commuting distance. All but one member of the 5th Fighter Interceptor Squadron (FIS) live in the EIR.

Located approximately 15 miles from Minot AFB, the City of Minot is the largest city in the EIR. Minot is a regional center for much of the shipping, wholesale, and retail trade in northern North Dakota. A large proportion of the base's civilian employees and procurements come from Minot and its outlying communities, such as Deering, Max, Lansford, and Foxholm. The city of Minot is the Ward County seat and accounts for 55 percent of the county population. Thirty-two percent of the 5th FIS live in Minot. Sixty-six percent live on base.

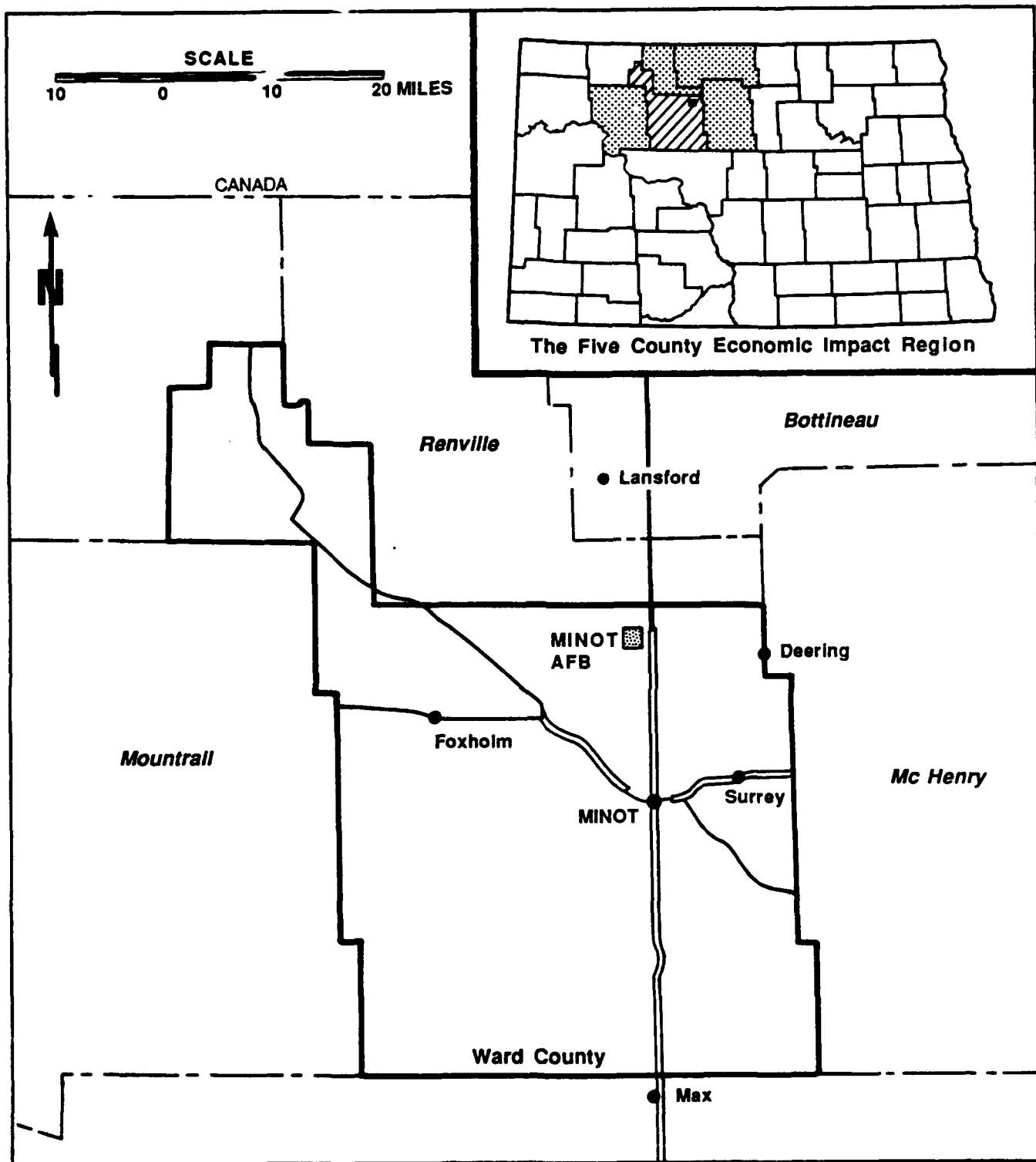
Analysis of data and information collected from local contacts at Minot AFB indicate that population and economic impacts of inactivating the 5th FIS would be felt primarily by Ward County and the City of Minot. The analysis in each section of this study will be focused accordingly; first, the overall EIR will be discussed, and, second, Ward County and the City of Minot will be discussed more specifically.

### **1.2 SOCIOECONOMIC OVERVIEW OF THE REGION**

The five-county EIR is located in north central North Dakota and is bordered by the Canadian provinces of Saskatchewan and Manitoba. The terrain is characterized by low rolling hills and lakes. Much of the area is used as pastures for cattle or for the cultivation of grain, hay, and sunflowers. With a population of 44,000, Minot and Minot AFB combined make up the largest urban area in the EIR. Bottineau is the second largest urban area with a population of 2,824. Total population in the EIR is approximately 89,000.

Most of the economic activity in the EIR is closely linked to agriculture and mining, both of which have suffered in recent years from declining exports and falling prices. Retail and wholesale trade, construction, and manufacturing industries depend largely on mining and agriculture for growth and, consequently, have experienced little income or employment gains.

The economic importance of Minot AFB is emphasized by the decline of other industries basic to the economy of the EIR. This is particularly true for Ward County and Minot, where a general sense of economic decline has been exacerbated by recent railroad layoffs and the failure of a sunflower oil processing plant in Velva.



**Figure 1-1**  
**DEFINITION OF THE FIVE-COUNTY**  
**ECONOMIC IMPACT REGION**

### **1.3 BASELINE AND IMPACT DATA SOURCES AND ASSUMPTIONS**

Information about the various socioeconomic resources was gathered from a review of available documents and extensive interviews with both on-base and local community members. A list of contacts and their titles are found under Persons and Agencies Contacted. A questionnaire was distributed to 5th FIS personnel by Minot AFB to determine housing patterns and relocation plans. A copy of the questionnaire and a summary of the responses are found in Appendix B. In some instances (such as baseline housing and income), the data available for the EIR were less than complete, and staff estimates were used instead. Except where otherwise noted, the data reported relate to fiscal 1986 and are expressed in 1986 dollars.

### **1.4 IMPACT ASSESSMENT METHODOLOGY**

The following actions were taken to evaluate the socioeconomic impacts of the proposed action:

- o A detailed description of the proposed inactivation of the 5th FIS was collected.
- o Complete data pertaining to 5th FIS personnel was obtained.
- o The EIR was established and local areas likely to be affected by the proposed action were identified.
- o The annual reductions in payroll, services, supply procurements and other revenues in the EIR related to the inactivation of the 5th FIS were estimated.
- o The economic resource impact statement (ERIS) economic base methodology (1987 revised) was applied to estimate the total economic activity and indirect jobs that would be lost by the inactivation of the 5th FIS.
- o The impacts of the proposed action for each socioeconomic resource were assessed and their significance in relation to baseline data was determined.
- o Any new missions likely to offset the impacts of 5th FIS inactivation were identified.

## **2.0 DESCRIPTION OF THE ACTION**

### **2.1 PURPOSE AND NEED**

The U.S. Air Force proposes to inactivate the 5th Fighter Interceptor Squadron (FIS) at Minot Air Force Base (AFB), North Dakota, effective the third quarter of fiscal 1988. This action is proposed to meet congressionally mandated reductions in the defense budget for fiscal 1988. Collateral considerations to this action include a reduction in end-year personnel and the possibility of transferring active missions to the Air Reserve Forces.

The U.S. Air Force received a revised budget from the office of the Secretary of Defense in July 1986 requiring an adjustment to the fiscal 1988 program objective memorandum. The revised budget calls for a \$30-billion reduction in the U.S. Air Force total obligation authority over the 5-year defense plan. This significant cut in funding requires the Air Force to make substantial force structure cuts in all mission areas. Inactivation of a strategic defense squadron would save approximately \$225 million over the 5-year period and would eliminate the cost of converting the unit to new aircraft. In addition, the U.S. Air Force has reduced its total procurement of F-15 aircraft by 123. This reduction necessitates either drawing down an existing unit or eliminating a planned conversion to F-15 aircraft.

Total end-year personnel considerations require a reduction in the number of active-duty authorizations. As one of several actions to meet personnel goals while maintaining the greatest operational capability possible, the U.S. Air Force is transferring a portion of the active air defense commitment to the Air Reserve Forces. Inactivation of an active-duty FIS is consistent with congressional fiscal guidance and reduces active-duty authorizations by several hundred. Without this action, the funds and number of airframes required to continue Air Reserve Forces modernization would be reduced.

### **2.2 PROPOSED ACTION**

#### **2.2.1 History of the 5th FIS**

As a defense tactical air command tenant unit, the 5th FIS's mission is to maintain interceptors and crews in a maximum state of readiness to protect domestic borders. The unit is equipped with 18 F-15 aircraft.

Since its activation in 1941, the 5th FIS has maintained a long and distinguished record. In the early years of World War II, the squadron flew British Spitfires with the Royal Air Force and adopted the "Spitten Kitten" emblem it still retains. The unit flew extensively in North Africa and Italy, providing fighter protection for bomber missions and flying long-range fighter missions.

Following the war, the unit was inactivated and reactivated a number of times. The 5th FIS was moved from Suffix County AFB, New York, to Minot AFB in 1957. The unit was recognized as the best F-106 squadron in the Air Force from 1968 to 1970 and has repeatedly earned the Aerospace Defense Command A award. In 1985, the unit converted from the F-106 aircraft to the F-15.

### 2.2.2 Proposed Action: Inactivation of the 5th FIS

The U.S. Air Force proposes to inactivate the 5th FIS, effective the third quarter of fiscal year 1988. This action would retire 18 F-106 aircraft (primary aircraft authorizations) to Davis Monthan AFB in Arizona. F-15 aircraft and related assets freed by the inactivation would be released to an Air National Guard strategic defense unit. It was also decided to transfer the 134th Tactical Fighter Squadron (TFS) in the Air National Guard at Burlington, Vermont, from general purpose forces to strategic defense forces as backfill for the 5th FIS drawdown. The proposed inactivation would tentatively reduce the number of personnel at Minot AFB by 630. Table 2-1 shows the specific areas of personnel reduction.

---

Table 2-1  
5th FIS Personnel Reductions<sup>1</sup>

	<u>PPE</u>	<u>BOS</u>	<u>Total</u>
Officer	43	0	43
Enlisted	509	52	561
Civilian	11	15	26
TOTAL	563	67	630

Note: 1. These estimates differ slightly from the TAC estimates (total of 622) reported in the Description of the Proposed Action and Alternatives. Primary program element (PPE) revisions were provided by Ken Cross/ACCE and based on actual personnel strength reported for September, 1986. Base operating support revisions were based on discussions with T.Sgt. Hayes/SACMET. A total of 29 PEC employees supporting the 5th FIS were identified too late to be included in this study.

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The 5th FIS maintains an active detachment at Loring AFB, Maine, consisting of two F-15s and 43 members. This detachment will also be deactivated, with aircraft and personnel withdrawn at a later date.

### **3.0 DESCRIPTION OF BASELINE SOCIOECONOMIC CONDITIONS**

The proposed inactivation of the 5th Fighter Interceptor Squadron (FIS) could potentially affect a variety of local socioeconomic attributes, including population, employment, income, housing, education, community services, and public finance. In this section, the current condition of each attribute is summarized with respect to the economic impact region (EIR), Ward County, and the city of Minot.

#### **3.1 POPULATION**

##### **3.1.1 Economic Impact Region**

The current population of the EIR is 90,000, according to 1984 estimates. The region experienced a moderate population increase of 3.6 percent since 1980. Table 3-1 indicates that this growth was not evenly distributed among the five counties. Two of the counties, Ward and Mountrail, experienced growth equal to, or exceeding, 5 percent between 1980 and 1984, while the other three counties experienced population declines during the same period. Population estimates later than 1984 are not available, but interviews with local officials suggest that all of the counties in the EIR are currently suffering population losses, a trend that is expected to continue until economic conditions in the region improve.

The current population of Minot is approximately 32,843, roughly 55 percent of the total population of Ward County.

##### **3.1.2 Minot AFB**

Minot AFB employed a total of 6,561 officers, enlisted members, and civilians at the end of fiscal 1986. Table 3-2 shows that the total population associated with the base, including dependents and retirees, exceeded 16,000. Thirty-one percent of active-duty military personnel live off base.

In fiscal 1986, approximately 630 men and women, or 9.6 percent of the base personnel, were assigned to the 5th FIS. Detailed residential information was analyzed for the 563 officers, enlisted members, and civilians who are currently assigned to the 5th FIS, along with approximately 787 dependents (composing a total population of 1,308). The base operating support (BOS) personnel associated with the 5th FIS included an estimated 52 enlisted members and 15 civilian employees in fiscal 1986. The place of residence and number of dependents of the BOS employees were estimated using ratios from the primary program element (PPE) personnel.

Table 3-3 shows the residential distribution of air base personnel, while Table 3-4 specifically shows the residential distribution of 5th FIS personnel. Sixty-six percent of the 5th FIS personnel reside on base. Of those people who live off base, 93 percent make their homes in the city of Minot.

**Table 3-1**  
**POPULATION**  
**Five-county Region**

	<i>1980</i>	<i>1984</i>
Bottineau	9,239	9,200
McHenry	7,858	7,600
Mountrail	7,679	8,100
Renville	3,608	3,600
Ward	58,392	61,400
<b>TOTAL</b>	<b>86,776</b>	<b>89,900</b>

**Sources:** 1987 Annual Planning Report Job Service North Dakota, December 1986; Department of Commerce, Bureau of Economic Analysis, 1987.



Table 3-2

## PERSONNEL AND POPULATION ASSOCIATED WITH MINOT AFB

<i>Personnel</i>	<i>No. of Personnel</i>
<b><u>Appropriated Fund Employees</u></b>	861
Enlisted	5,044
Civil Service	
General Schedule	333
Wage Grade	323
SUBTOTAL	6,561
<b><u>Non-appropriated Fund Employees</u></b>	
NAF	231
Base Exchange	174
SUBTOTAL	405
<b><u>Retired Military</u></b>	
Air Force	426
Army	71
Marines	7
Navy	52
SUBTOTAL	556
<b><u>Additional Personnel</u></b>	
Dependents	
On Base	5,584
Off Base	2,036
Retiree <sup>1</sup>	851
SUBTOTAL	8,471
Nothern Tier Federal Credit Union	27
Norwest Bank	7
Souris River Telephone Company	17
SUBTOTAL	51
<b>TOTAL PERSONNEL</b>	<b>16,044</b>

**Notes:** 1. Estimate is based on 1.53 dependents per sponsor. Source: DMDC.

**Source:** Economic Resource Impact Statement 1986, Minot AFB.

**Table 3-3**

**RESIDENTIAL DISTRIBUTION OF MINOT AFB PERSONNEL<sup>1</sup>**

<i>Community</i>	<i>County</i>	<i>ZIP Code</i>	<i>Minot AFB Personnel</i>
Minot AFB	Ward	58704-58705	4,177
Minot	Ward	58701-58702	1,838
Glenburn	Renville	58740	36
Deering	McHenry	58731	18
Lansford	Bottineau	58750	16
Burlington	Ward	58722	13
Surrey	Ward	58785	5
Norwich	McHenry	58768	4
Foxholm	Ward	58738	3
Sawyer	Ward	58781	3
Des Lacs	Ward	58733	2
Max	McLean	58759	2
Mandan	Morton	58554	2
Carpio	Ward	58725	2
Bottineau	Bottineau	58318	1
Donnybrook	Ward	58734	1
Drake	McHenry	58736	1
Granville	McHenry	58741	1
Kenmare	Ward	58746	1
Makoti	Ward	58756	1
Maxbass	Bottineau	58760	1
Mohall	Renville	58761	1
Newburg	Bottineau	58762	1
Towner	McHenry	58788	1
Bismark	Burleigh	58501	1
<b>TOTAL</b>			<b>6,132</b>

**Note:** 1. Incomplete survey of personnel.

**Source:** Brenda Eppard, Minot AFB, Housing Office, 1987.

Table 3-4

RESIDENTIAL DISTRIBUTION OF 5TH FIS PERSONNEL<sup>1</sup>

<i>Community</i>	<i>Zip Code</i>	<i>5th FIS Personnel</i>	<i>Number of Dependents</i>
Minot AFB	58704-58705	417	700
Minot	58701	199	219
Deering	58731	11	23
Foxholm	58738	1	3
Lansford	58750	1	1
Max	58759	1	3
TOTAL		630	949

Note: 1. As of June 1987.

Source: Ken Cross, SAC/ACC.

### **3.2 EMPLOYMENT**

#### **3.2.1 Economic Impact Region**

Total employment in the EIR was 34,564 in 1986, the latest year in which figures for the region are available. Sixty-eight percent of employment is in Ward County. Unemployment among all workers was 7.7 percent in 1986, which was 22 percent higher than the state average. As Table 3-5 indicates, unemployment has been rising in the region since 1981.

During the 1980s, there has been little growth in wage and salary employment for most of the counties in the EIR. Table 3-6 shows that total employment in the region increased from 24,647 to 25,263 between 1980 and 1984, a modest increase of 2.5 percent. Table 3-7 shows the distribution of wage and salary employees by sector in Ward County, which is the county expected to absorb most of the employment losses associated with the proposed action. The total number of jobs in the county has remained steady since 1984. In general, the composition of the workforce has moved away from resources and manufacturing toward services and trade. More specifically, the mining, construction, and manufacturing sectors have lost a substantial number of jobs since the early 1980s.

The retail-trade sector accounts for roughly 25 percent of nonmilitary employment. The number of jobs in this sector has increased slightly between 1980 and 1986. The services sector, however, grew by 788 jobs during the same period.

Table 3-8 shows wage and salary employment by sector for the city of Minot. This table was included to show the important role the city plays in the economy of Ward County. Over 90 percent of the wage and salary employment in the county is found at Minot. Wage and salary employment totaled 18,820 workers in 1987, which is a slight increase over the 1986 estimate.

#### **3.2.2 Minot AFB**

Minot AFB is the single largest employer in the Minot area with over 6,500 appropriated-fund employees (see Table 3-9). Combined with non-appropriated-fund employees (e.g., base exchange), contractors, and other service workers, employment associated with the base totals over 7,000 jobs. Of the appropriated-fund employees working at the base, 90 percent are in the military, and 15 percent of those are officers. Civilian employees account for the remaining 10 percent. Local spending by base employees supports an additional 1,268 jobs in Ward County, as calculated in the fiscal 1986 economic impact resource statement. Employment associated with the 5th FIS was described previously, in section 3.1.2.

### **3.3 INCOME**

#### **3.3.1 Economic Impact Region**

Like employment, personal income is an important indicator of economic conditions in a region. Table 3-10 shows the distribution of personal income (including farm and military employment) and wages for the five counties in the EIR. Total personal income in the region was \$1,095 million in 1984. Total

Table 3-5

UNEMPLOYMENT RATES  
Five-county Region

	Unemployment Rates					1986		
	1981	1982	1983	1984	1985	Labor Force	Employment	Unemployment Number Rate
Bottineau	3.5	6.1	6.0	5.0	7.0	3,797	3,515	282 7.4
McHenry	8.5	10.2	10.2	11.3	13.0	3,086	2,670	416 13.5
Mountrail	5.4	6.7	7.8	7.2	7.8	3,594	3,243	351 9.8
Renville	3.3	4.5	5.7	4.7	6.2	1,464	1,333	131 8.9
Ward	5.4	6.1	5.5	5.7	6.8	25,524	23,803	1,716 6.7
TOTAL						37,465	34,564	2,896 7.7

Source: 1987 Annual Planning Report, Job Service North Dakota, December 1986; Job Service North Dakota, 1987.

**Table 3-6**  
**NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT**  
**Five-county Region**

	-----NUMBER OF EMPLOYEES-----				
	1980	1981	1982	1983	1984
Bottineau	2,096	2,245	2,200	2,195	2,210
McHenry	1,184	1,241	1,206	1,201	1,193
Mountrail	1,889	1,863	1,891	1,794	1,735
Renville	719	738	684	696	716
Ward	18,759	18,765	18,723	19,067	19,409
<b>TOTAL</b>	<b>24,647</b>	<b>24,852</b>	<b>24,704</b>	<b>24,953</b>	<b>25,263</b>

**Note:** 1. Employment figures are based on annual averages. Railroad and military employment are not included. Includes employment covered by job insurance only.

**Source:** 1987 Annual Planning Report, Job Service North Dakota, December 1986.

**Table 3-7**  
**NONAGRICULTURAL EMPLOYMENT<sup>1</sup>**  
**Ward County**

	-----NO. OF EMPLOYEES-----						
	1980	1981	1982	1983	1984	1985	1986
Mining	218	247	170	135	141	145	125
Construction	1,320	1,132	1,032	1,105	1,081	970	987
Manufacturing	909	893	832	842	857	809	756
Transportation <sup>2</sup> , communications, and utilities	930	952	934	891	930	959	964
Wholesale trade	1,687	1,769	1,752	1,743	1,780	1,708	1,688
Retail trade	4,882	4,681	4,841	4,924	5,134	5,096	4,965
Finance, insurance and real estate	925	920	905	933	972	998	1,004
Services	4,020	4,385	4,480	4,698	4,671	4,674	4,808
Government <sup>3</sup>	3,868	3,786	3,777	3,796	3,843	3,982	4,035
TOTAL	18,759	18,765	18,723	19,067	19,409	19,341	19,332

**Notes:** 1. Employment figures are based on annual averages. Only includes employment covered by job insurance.  
2. This group does not include railroad employment.  
3. This group does not include military employment.

**Sources:** 1987 Planning Report, Job Service North Dakota, December 1986; North Dakota Employment and Wages 1986, Job Service North Dakota, January 1987.

**Table 3-8**  
**WAGE AND SALARY EMPLOYMENT**  
**City of Minot<sup>1</sup>**

	1984	1985	1986	1987
Mining	80	80	120	100
Construction	780	650	680	430
Manufacturing	790	700	770	740
Transportation, communications, utilities	1,250	1,290	1,180	1,150
Wholesale trade	1,400	1,310	1,400	1,420
Retail trade	4,810	4,880	4,690	4,770
Finance, insurance, real estate	900	930	980	1,060
Services	4,460	4,190	4,910	4,940
Government <sup>2</sup>	3,640	3,960	3,970	4,210
<b>TOTAL</b>	<b>18,110</b>	<b>17,990</b>	<b>18,700</b>	<b>18,820</b>

**Note:** 1. Mid-April estimates. Total employment varies seasonally, with government employment decreasing in the summer and mining, construction, and manufacturing employment increasing during the same period. Only includes employment covered by job insurance.

2. Does not include military employment.

**Source:** Michael Rystedt, Job Service North Dakota, 1987.



**Table 3-9**  
**MINOT AFB PERSONNEL**

	<i>Number of Employees</i>
<b><u>Military</u></b>	
Officers	861
Enlisted	5,044
<b><u>Civilians</u></b>	
General Schedule	333
Wage Grade	323
Total Appropriated-Fund Personnel	6,561
<b><u>Other Employees</u></b>	
<b><u>Non-Appropriated-Fund Employees</u></b>	
Full Time	33
Part Time	77
Intermittent	116
Temporary	5
<b><u>Base Exchange</u></b>	
Full Time	32
Part Time	72
Intermittent	70
<b><u>Northern Tier Federal Credit Union</u></b>	
Full Time	19
Part Time	8
<b><u>Norwest Bank</u></b>	
Full Time	2
Part Time	5
<b><u>Souris River Telephone Co.</u></b>	
Full Time	17
Part Time	0
Total Other Employees	456
TOTAL	7,017

Source: Economic Resource Impact Statement 1986, Minot AFB, 1987.

**Table 3-10**  
**INCOME AND EARNINGS (1984)**  
**Five-county Region**

	<i>Per Capita Personal Income<sup>1</sup></i>	<i>Total Personal Income</i>	<i>Total Earnings<sup>2</sup></i>
Bottineau	\$13,604	\$125,266,000	\$69,657,000
McHenry	12,020	91,061,000	42,643,000
Mountrail	10,709	87,259,000	45,794,000
Renville	14,769	53,079,000	30,606,000
Ward	12,027	738,454,000	522,764,000
<b>TOTAL</b>		<b>\$1,095,119,000</b>	<b>\$711,464,000</b>

**Note:** 1. Personal income represents income received from all sources including gross wages and salaries, personal dividend income, and rental income.  
2. Earnings are comprised of wages and salaries, other labor income, and proprietors' income. Military earnings are included in this estimate.

**Source:** U.S. Department of Commerce, Bureau of Economic Analysis, 1987.

earnings were \$711.5 million. Agriculture is the largest single source of income in the region, accounting for 36 percent of total earnings in 1984.

Average monthly earnings in the region are reported in Table 3-11. Average nominal earnings increased approximately 24 percent from 1980 to 1985. After adjusting for inflation, real wages decreased almost 5 percent over that period.

In 1984, total personal income in Ward County was \$738.5 million, approximately 67 percent of the region total. Wage and salary earnings in Ward County were \$288 million in 1984, rising to \$296 million in 1985, a rate of increase approximately one percent above the national consumer price index. Table 3-12 shows the distribution of payrolls by sector in the county. Local government is the largest nonmilitary source of wage and salary employment, accounting for 23 percent of the total payrolls in 1985. Table 3-13, when compared with Table 3-12, indicates that almost all wages and salaries in Ward County are concentrated in the city of Minot.

### **3.3.2 Minot AFB**

Total gross payroll disbursed to employees at Minot AFB in fiscal 1986 was \$151.1 million (see Table 3-14). Of this amount, \$892,872 was paid to employees of the Northern Tier Federal Credit Union, Norwest Bank, and Souris River Telephone and Mutual Aid Cooperative. Military personnel accounted for 85 percent of the total earnings. An additional \$5,556,000 was paid to military retirees residing in Ward County.

The 5th FIS total payroll for fiscal 1986 was approximately \$17 million and accounted for about 11 percent of the total earnings generated by Minot military and civilian employees. About \$11.2 million (66 percent of the total 5th FIS payroll) was paid to personnel residing on base.

## **3.4 HOUSING**

### **3.4.1 Economic Impact Region**

Year-round housing stock for the five-county region totaled 33,030 in 1980, the latest year for which data is available. As Table 3-15 shows, 20,405 units (approximately 62 percent) were owner-occupied and 9,551 (about 29 percent) were rental units. Ward County had the greatest number of homes, with almost 65 percent of the total in the EIR. The smallest number of housing units was in Renville County, which accounted for 4 percent. In 1980, vacancy rates for owner-occupied units in the region averaged 2.7 percent as opposed to 9 percent for rental units.

Current housing data is not available for Ward County. The latest available housing information from the 1980 census sets total housing in Ward County at 21,381 units. Discussions with representatives of the U.S. Post Office in Bismarck and of local utility companies and businesses yielded a figure of approximately 19,200 units. The census data is considered more complete and is used in this study.

**Table 3-11**  
**AVERAGE MONTHLY EARNINGS<sup>1</sup>**  
**Five-county Region**

	1980	1981	1982	1983	1984	1985
Bottineau	\$902	\$1,027	\$1,045	\$973	\$1,075	\$1,120
McHenry	913	1,063	1,146	1,119	1,148	1,146
Mountrail	824	919	980	1,021	1,044	1,087
Renville	919	1,048	1,000	1,000	1,102	1,071
Ward	993	1,092	1,136	1,166	1,187	1,227
AVERAGE	910	1,030	1,061	1,056	1,111	1,130
AVERAGE (\$1985)	1,183	1,215	1,178	1,140	1,144	1,130

**Notes:** 1. Only includes employment covered by job insurance.

**Sources:** 1987 Annual Planning Report, Job Service North Dakota, December 1986; CPI Index from Economic Report of the President, January 1987.

**Table 3-12**  
**TOTAL ANNUAL PAYROLLS<sup>1</sup>**  
**Ward County**

	<i>1984</i>	<i>1985</i>
Mining	\$3,700,404	\$3,927,180
Construction	22,376,700	20,730,840
Manufacturing	16,073,892	15,659,004
Transportation, communication, utilities	17,800,200	18,942,168
Wholesale trade	28,536,960	28,263,984
Retail trade	55,200,768	56,565,600
Finance, insurance, real estate	15,349,824	16,263,408
Services	63,843,228	65,903,400
Government <sup>2</sup>	65,392,488	69,907,992
<b>TOTAL</b>	<b>\$288,274,464</b>	<b>\$296,163,576</b>

**Note:** 1. Only employment covered by job employment. Payrolls are calculated by multiplying jobs in each sector by the respective average rate.

2. This category does not include military employment.

**Source:** Job Service North Dakota, 1986; Job Service North Dakota, 1987; URS Corporation, 1987.

**Table 3-13**  
**TOTAL ANNUAL PAYROLLS**  
**City of Minot<sup>1</sup>**

	<i>1984</i>	<i>1985</i>	<i>1986</i>
Mining <sup>2</sup>	\$2,099,520	\$2,166,720	\$3,096,720
Construction	16,146,000	13,891,800	14,421,960
Manufacturing	14,817,240	13,549,200	14,754,012
Transportation, communication, utilities	23,925,000	25,480,080	23,146,128
Wholesale trade	22,444,800	21,677,880	23,098,608
Retail trade	51,717,120	54,168,000	51,666,180
Finance, insurance, real estate	14,212,800	15,155,280	15,924,600
Services	60,959,280	59,079,000	68,748,480
Government <sup>3</sup>	61,938,240	69,521,760	69,251,112
<b>TOTAL</b>	<b>\$268,260,000</b>	<b>\$274,689,720</b>	<b>\$284,107,800</b>

**Notes:** 1. Figures only cover employment.  
2. Payrolls are based on statewide mean income.  
3. This category does not include military employment.

**Source:** Job Service North Dakota, 1986; Job Service North Dakota, 1987; URS Corporation, 1987.

**Table 3-14**

**PAYROLL DISBURSED TO MINOT AFB EMPLOYEES  
(FY 1986)**

<i>Category</i>	<i>Dollars</i>
<b><u>Direct Military, Civilian, and Retired Personnel</u></b>	
Military	\$128,457,840
Civil service	13,373,072
Base exchange	1,224,203
Nonappropriated funds	1,634,231
Retired personnel:	
Air Force	4,596,000
Army	576,000
Marines	24,000
Navy	360,000
<b>SUBTOTAL</b>	<b>\$150,245,346</b>
<b><u>Other Base Employees</u></b>	
Northern Tier Federal Credit Union	\$308,333
Norwest Bank	55,200
Souris River Telephone and Mutual Aid Cooperative	529,339
<b>SUBTOTAL</b>	<b>892,872</b>
<b>TOTAL</b>	<b>151,138,218</b>

**Source:** Economic Resource Impact Statement 1986, Minot AFB, 1987.

**Table 3-15**  
**YEAR-ROUND HOUSING**  
**Five-county Region**  
**(1980)**

	<i>Total</i>	<i>Owner Occupied</i>	<i>Renter Occupied</i>	----- VACANCY RATE ----- (%)	
				<i>Owner Occupied</i>	<i>Renter Occupied</i>
<b>Bottineau</b>	3,764	2,600	670	2.8	9.0
<b>McHenry</b>	3,375	2,287	545	3.9	13.4
<b>Mountrail</b>	3,066	2,046	629	1.4	7.5
<b>Renville</b>	1,444	1,035	252	2.8	8.4
<b>Ward</b>	21,381	12,437	7,455	2.4	6.9
<b>TOTAL</b>	33,030	20,405	9,551		
<b>AVERAGE</b>				2.7	9.0

Source: Detailed Housing Characteristics of North Dakota, 1980 Census of Housing.



The housing stock in the city of Minot is listed in Table 3-16. The total number of housing units as of June 30, 1987 is 14,101. The percentage of single-family homes to the total stock has remained at approximately 63 percent since 1984.

As shown in Table 3-17, the average annual number of residences listed for sale in Minot is about 1,192. Homes were sold after approximately 105 days on the market. The average price of residential units has remained fairly stable since 1984 and fluctuates within a five-percent range. The average selling price of a home is \$53,700. The number of units sold annually has not approached the number of residential listings within the last four years but, in fact, has been 50 percent or less of the total number of residential listings.

Table 3-18 shows the average vacancy rates for the city of Minot. The rate increased from 8.32 percent in 1985 to 10.17 percent in 1986. The vacancy rate in 1987 has decreased to 8.98 percent. New construction starts from 1984 to 1987 are shown by Table 3-19.

#### **3.4.2 Minot AFB**

The total number of military family housing (MFH) units at Minot AFB is 2,470 (Hagel 1987). As of August, 1987, 2,460 of these dwellings were occupied and 10 were temporarily out of service for maintenance. The average waiting time to move into MFH is six months. The residential distribution of the 5th FIS is described in section 3.1.2.

### **3.5 COMMUNITY SERVICES**

The community service impacts studied in this socioeconomic impact report will fall almost exclusively on the city of Minot and adjacent areas in Ward County.<sup>1</sup> The analysis, therefore, will focus on the services in and near the city of Minot.

#### **3.5.1 Education**

##### **3.5.1.1 Public Schools**

The major school impacts will fall on the Minot public school system which serves the majority of student dependents of Minot military personnel. Public schools in Glenburn and Deering have much smaller student enrollments, and may have proportionally larger impacts from the proposed action.

The Minot public school system, under the direction of Superintendent Dr. Robert Mundy, includes 13 elementary, 3 junior high, and 2 high schools. To serve the educational needs of students living on Minot AFB, the public school system operates two elementary schools and one junior high school on the base. High school students living on base attend a Minot public high school off base. Table 3-20 lists the area schools and their enrollments, and identifies schools located on Minot AFB.

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1. Information from the Minot 5th FIS questionnaire indicated that dependent students attended school at Deering and Glenburn in McHenry County, North Dakota.

**Table 3-16**  
**HOUSING UNITS**  
**City of Minot**

<i>Type</i>	<i>1984</i>	<i>1986</i>	<i>1987<sup>1</sup></i>
Single family	8,693	8,819	8,853
2-unit	310	310	310
3-unit	366	366	366
4-unit	844	844	844
5-unit	1,984	2,191	2,217
Mobile homes <sup>2</sup>	--	1,193	1,197
Public housing for low income and elderly	314	314	314
<b>TOTAL</b>	<b>12,511</b>	<b>14,037</b>	<b>14,101</b>

**Note:** 1. Actual data as of June 30, 1987.

2. Excludes military, disabled, and senior citizens.

**Source:** Minot City Assessor; Ward County Office of Tax Equalization.

**Table 3-17**  
**REAL ESTATE STATUS**  
**City of Minot**

	<i>1984</i>	<i>1985</i>	<i>1986</i>	<i>1987<sup>1</sup></i>
Residential listing	1,068	1,260	1,310	564
Units sold	448	492	568	286
Average days on market	95	116	106	105
Average selling price	\$54,680	\$52,177	\$54,715	\$53,231

**Note:** 1. Actual data as of June 1987.

**Source:** Minot Multiple Listing Service, 1987

**Table 3-18**  
**VACANCY RATES FOR ALL AVAILABLE RESIDENTIAL UNITS**  
**City of Minot**

	<i>1985</i> (%)	<i>1986</i> (%)	<i>1987<sup>1</sup></i> (%)
Average vacancy rate	8.32	10.17	8.98

**Note:** 1. Data are actual as of July 1987.

**Source:** Minot Chamber of Commerce Housing and Construction Committee; Souris Valley Apartment Association, 1987.

**Table 3-19**  
**NEW HOUSING CONSTRUCTION**  
**City of Minot**

<i>Type</i>	<i>1984</i>	<i>1985</i>	<i>1986</i>	<i>1987<sup>1</sup></i>
Single family	86	75	51	34
Multiple dwelling	196	79	128	26
<b>TOTAL</b>	<b>282</b>	<b>154</b>	<b>179</b>	<b>60</b>

**Note:** 1. Data are actual as of June 1987.

**Source:** John Coughlin, president, Coughlin Construction, 1987.

**Table 3-20**

**1986 MINOT PUBLIC SCHOOLS SPRING ENROLLMENT**

<i>Elementary Schools</i>	<i>Enrollment</i>
Bel Aire	340
Dakota <sup>1</sup>	727
Edison	542
Jefferson	170
Lincoln	192
Longfellow	335
McKinley	160
North Hill	468
North Plains <sup>1</sup>	624
Perkett	251
Roosevelt	166
Sunnyside	306
Washington	313
<b>TOTAL ELEMENTARY ENROLLMENT</b>	<b>4,594</b>
<i>Junior High Schools (Grades 7-8)</i>	
Memorial <sup>1</sup>	266
Jim Hill	373
Erik Ramstad	557
<b>TOTAL JUNIOR HIGH ENROLLMENT</b>	<b>1,196</b>
<i>High Schools</i>	
Central Campus (Grades 9-10)	1,105
Magic City Campus (Grades 11-12)	1,022
<b>TOTAL HIGH SCHOOL ENROLLMENT</b>	<b>2,127</b>
<b>TOTAL MINOT PUBLIC SCHOOLS</b>	<b>7,917</b>

**Note:** 1. On-base school

**Source:** Dr. Robert Mundy, Superintendent of Public Schools, Minot Public School District, Minot, N.D., August 1987.

The public school enrollment for the 1986-1987 school year was 7,917 students and has been relatively constant over the last several years. In 1986, Minot public schools experienced only about a 2-percent increase in enrollment (173 students) from its 1985-1986 enrollment of 7,744 students. Glenburn and Deering public school systems in McHenry County serve kindergarten through grade 12. Attendance during the 1986-1987 school year was 320 and 64, respectively (see Table 3-21).

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Table 3-21

1986-1987 School Enrollment

<u>School System</u>	<u>Enrollment</u>
Minot	7,917
Glenburn	320
Deering	64

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The Minot public school system operated on an annual budget of \$21,385,381 for the 1986-1987 school year. The 1985-1986 school year budget was \$21,301,346.

As shown in Table 3-22, the major sources of revenue for the Minot school district are local, state, and federal funds. Local support for the schools comes primarily from property taxes. The 1986 property tax levy for the Minot public school district was 150.25 mills per dollar taxable value of the property. (Note: The taxable value is established by first determining the assessment value of the property. The assessment value is determined by applying an assessment factor of 50 percent to the market value of the property. The taxable value is then calculated by applying a tax factor of 10 percent to the assessment value.)

State funding of schools for the 1986-1987 school year included basic grants of \$1,400 per student plus funding for vocational and special education. The federal funding available to the school systems primarily includes the Federal Education Impact Aid funds and those funds available for chapters 1 and 2 of the Head Start Program.

The Federal Education Impact Aid funds for fiscal 1986 were \$2,563,261 (Minot AFB, ACC, January 1987). These federal funds are received in lieu of property taxes which are not paid by federal government on federal property to state or local governments. The aid is based on the number of military dependent children enrolled in the school district, their place of residence, and their average daily attendance at the public schools. For the purposes of the Federal Education Impact Aid funds, students are placed into two categories: category "A" students live on federal property with at least one parent who is a uniformed military employee. Students residing off base with a uniformed military parent(s) are category "B" students.

Table 3-22

**REVENUE SOURCES**  
**Minot Public School System**

<i>Revenue Source</i>	<i>Revenue</i>
Local	3,145,700
County	12,500
State	13,501,696
Federal <sup>1</sup>	3,235,886
Others	<u>1,488,599</u>
<b>TOTAL</b>	<b>\$21,384,381</b>

**Note:** 1. Federal revenues include impact aid funds and payments from other sources.

**Source:** Dr. Robert Mundy, Superintendent of Public Schools, Minot Public School District, Minot, ND, August 1987.

Table 3-23

**FY 1986 FEDERAL EDUCATION IMPACT FUNDS**  
**Minot Public School System**

<i>Category</i>	<i>Funding per Student</i>	<i>Average Daily Attendance</i>	<i>Total Funds</i>
"A" On Base	1,430.50	1,663	\$2,379,264
On Base Special Ed	2,145.75	129	277,187
"B" In Town	22.65	336	7,619
In Town Special Ed	33.97	21	731
Low Rent	207.42	14	2,972
Civil Service	20.38	389	7,938
Low Rent	20.38	87	1,774
<b>TOTAL</b>		<b>2,639</b>	<b>\$2,563,261</b>

**Note:** Federal impact funding rates were reduced 4.3 percent by federal legislation under Gramm-Rudman. The amounts presented in the table include this reduction.

**Source:** Captain R.A. Leathers, ACC, Minot AFB, August 1987.

There are currently 1,378 elementary, 266 junior high, and 370 high school students, totaling 2,014 category "A" students living on base (personal communication, Mundy, July 1987.) Category "B" students enrolled in the Minot public school system include 1,145 elementary, junior high, and high school students. Table 3-23 presents the impact funds per student and the average daily attendance for fiscal 1986.

The level of Federal Educational Impact Aid funding is also determined by the type of education program required for the student. A higher level of funding is offered for special education students. Impact funding is also provided for students that fall in certain civil service and low rent categories that reflect different levels of impact on the school district in lieu of property taxes.

The Federal Educational Impact funds to Glenburn and Deering public schools are estimated at \$20,000 and \$4,200, respectively (see Table 3-24).

#### 3.5.1.2 Parochial Schools

The city of Minot is also served by several parochial schools at both the elementary and high school levels. In 1986, 370 students were enrolled in three parochial elementary schools and 347 students were enrolled in one parochial high school.

#### 3.5.1.3 Post-Secondary Education

Minot is served by three post-secondary educational facilities. Minot State University has approximately 3,500 students enrolled full time, of which 154 are Minot AFB personnel (interview, Gordon Olsson, President, Minot State University, July 1987). The university has an extension campus at Minot AFB with an average of 500 students, all of which are base personnel. The extension students average six units of study per quarter at a fee of \$48 per unit. Air Force personnel at Minot AFB paid over \$605,000 dollars in college tuition and instructor fees in 1986 (Minot AFB Economic Resource Impact Statement, 1986).

Other post-secondary facilities include the Northwest Bible College and the Trinity Nursing School. Table 3-25 lists the enrollment of these facilities.

#### 3.5.2 Fire Protection

The fire department provides all fire protection within the City of Minot. Areas of Ward County outside the city limits are primarily protected through rural fire districts.

The city of Minot operates with 46 full-time employees from three fire stations in the city. The fire department's operating objective is to provide the necessary manpower and apparatus to be ready and capable to respond to all incidents with a travel time of four minutes. To support its objectives, the department maintains a training program for its firefighters and aids the fire prevention program by delivering safety messages to students in kindergarten through fourth grades in the Minot school system.

**Table 3-24**  
**FEDERAL EDUCATION IMPACT FUNDS**  
*(1986-1987)*

<i>School</i>	<i>Military Students</i>	<i>Federal Impact Funds</i>
Minot	2,639	\$2,563,261
Glennburn	90 <sup>1</sup>	\$20,000
Deering	20 <sup>2</sup>	\$4,149 <sup>3</sup>
TOTAL	2,749	\$2,587,461

**Notes:** 1. Estimate by Chuck Dunlop, Glennburn Schools, phone conversation, August 1987.  
2. Miran Nerem, Deering School System, phone conversation, August 1987.  
3. Approximation based on average amount of \$207.48 per student.

**Table 3-25**  
**POST-SECONDARY EDUCATION FACILITIES**  
**Minot, North Dakota**

	<i>Teachers</i>	<i>Enrollment</i>
Minot State University	200	3,100
Northwest Bible College <sup>1</sup>	9	105
Trinity Nursing School	7	43

**Note:** 1. This operation was recently suspended.

**Source:** Minot Area Development Corporation, 1986.



The department's budget for 1987 is presented in Table 3-26. Property taxes are the main source of revenue for the rural fire districts serving Ward County. For 1986, the tax levies ranged from 1.41 mills to 13.75 mills per dollar of taxable valuation.

### **3.5.3 Police Protection**

Police protection is provided within the city of Minot through the police department and in Ward County by the sheriffs' department. The city and the county have a joint dispatch center (the Minot central dispatch) to coordinate police response.

The city's police department and criminal investigation units are staffed with 69 personnel. Their goals include reducing the already low crime rate; providing traffic enforcement, particularly in areas experiencing serious accidents and hazards; practicing effective crime prevention techniques through education; and providing high visibility patrols as a major deterrence to crime. The city's criminal investigation unit closely coordinates with state and federal authorities through monthly meetings between the city of Minot and Minot AFB.

The Minot budget for police services is shown in Table 3-27.

Police services are provided in Ward County through the sheriff's department, which is staffed with 17 full-time and 2 part-time professionals. Ward County also provides jail operations. Ward County's budget for the county sheriff was \$572,652 in 1986 and \$557,187 in 1987 (Ward County Budget 1987).

### **3.5.4 Hospital Services**

The Minot area is served by Trinity Hospital and Saint Joseph Hospital, totaling about 448 beds. The hospitals and medical facilities serve a large area surrounding Ward County. An estimated 70 percent of the total hospital billings are from outside Minot (interview, Mayor George Christianson and City Manager Bob Schempp, City of Minot, July 1987).

The Air Force operates the U.S. Air Force regional hospital in Minot to serve active duty military personnel and their dependents. Health care is also provided to eligible veterans and Indian public health beneficiaries (Minot AFB Economic Resource Impact Statement FY 86). The hospital has 40 beds. To meet Air Force requirements supplemental medical care is also obtained locally (\$380,300) with additional fees (\$1,025,945) paid by the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) for medical service not available through the U.S. Air Force hospital (Minot AFB Economic Resource Impact Statement FY 86). A new medical facility is being constructed on the air base.

### **3.5.5 Transit Services**

The city of Minot provides city bus services. The bus service includes the operation of a five route system eight hours per workday with the operating objective of a one-half hour headway. The city provides additional buses for a two hour period in the mornings and afternoons that schools are in session.

**Table 3-26**  
**FIRE DEPARTMENT BUDGET**  
**City of Minot**

	<i>1986</i>	<i>1987</i>
Fire Administration	95,985	94,559
Fire Control	1,080,050	1,082,801
Fire Prevention	32,027	32,114
<b>TOTAL</b>	<b>1,208,062</b>	<b>1,209,474</b>

Source: City of Minot 1987 Annual Budget.

**Table 3-27**  
**POLICE DEPARTMENT BUDGET**  
**City of Minot**

	<i>1986</i>	<i>1987</i>
Police Administration	\$350,326	\$319,920
Police Patrol	1,285,272	1,268,585
Criminal Investigation	248,213	249,154
<b>TOTAL</b>	<b>\$1,883,811</b>	<b>1,837,659</b>

Source: City of Minot 1987 Annual Budget.

The annual bus service budget for the city was \$338,824 in 1986 and \$305,084 in 1987 (City of Minot 1987 Annual Budget). The city bus system funding sources are presented in Table 3-28.

The city of Minot provides a modern airport facility for the general public and commercial airlines. Airport operations include facilities for handling passengers, cafe and lounge, car rentals, gift shop, U.S. Customs and Immigration, Federal Aviation Administration flight service station, and aircraft fueling. The city's airport budget was \$1,412,860 in 1986 and \$942,973 in 1987.

### **3.6 UTILITIES**

#### **3.6.1 Water**

Domestic and commercial water requirements in Ward County are served by water wells. The Minot water department provides water for domestic and commercial purposes within the city and on Minot AFB. The water is obtained from deep wells and from the Souris River. Total treated water available is 16 to 18 million gallons per day (gpd), with a water treatment plant capacity of 18 million gpd (Minot Area Development Corporation 1986).

The water department is funded through the sale of water. Water rates are \$5.35 for the first 300 cubic feet and \$0.77 per hundred cubic feet thereafter and include sales tax (Minot Area Development Corporation 1986). City of Minot water sales totaled \$2,256,000 in 1986 and \$2,260,000 in 1987 (City of Minot 1987 Annual Budget).

In fiscal 1986, Minot AFB purchases of water from the city averaged about 56 million gallons per month, at a cost of \$51,470 per month, for a total of \$617,640 (see Table 3-29).

The city of Minot budget operates the water department activities as a utility enterprise. Water system expenses were \$2,344,730 in 1986 and \$2,396,270 in 1987 (City of Minot 1987 Annual Budget).

#### **3.6.2 Wastewater**

Wastewater disposal in Ward County is, in general, dependent on septic fields and other similar methods of disposal. The city of Minot, through its sewer utility, provides wastewater treatment prior to returning the water to the Souris River. The city uses a waste stabilization pond with a capacity of 729 surface acres. The city's system has a total storage capacity of 800 million gallons, and its load in 1986 was about 4 million gpd (Minot Area Development Corporation 1986).

The city funds its sewer department through sewer charges and fees. Sewer sales in 1986 were \$1,178,000 in 1986 and \$1,180,000 in 1987 (City of Minot 1987 Annual Budget). The sewer use charge is \$1.86 per water meter per month plus a charge of \$0.63 per 100 cubic feet of water use (Minot Area Development Corporation 1986). The 1987 budget projects sewer sales as \$1,180,000. Minot AFB provides its own facilities for the treatment disposal of wastewater and, therefore, does not purchase sewer services from the city.

**Table 3-28**  
**BUS FUNDING SOURCES**  
**City of Minot**

	<i>1986</i>	<i>1987</i>
Operating Revenue	\$64,000	\$65,000
Personal Property Replacement	11,200	10,750
Federal Grant Section 18	94,000	80,000
State Grant Transportation School	10,000	10,000
Miscellaneous Income (Deficit)	4,000	(7,000)
Tax Levy <sup>1</sup>	127,700	146,334
<b>TOTAL</b>	<b>\$310,900</b>	<b>\$305,084</b>

Note: 1. The Mill levy was 3.33 mills in 1986 and 3.81 mills in 1987.

Source: City of Minot 1987 Annual Budget.

**Table 3-29**  
**MINOT AFB WATER PURCHASES FY 86**  
*(Monthly Average)*

	<i>Purchases (Gallons)</i>	<i>Cost Per 1000</i>	<i>Total Cost</i>
Housing and Trailers	34,045,677	\$0.91	\$30,828
Base and Missile Facilities	21,490,000	\$0.94	\$20,642
<b>TOTAL</b>	<b>55,535,677</b>		<b>\$51,470</b>
<b>Estimated Total for FY 86</b>			<b>\$617,640</b>

Source: Personal communication, Ken Cross, ACC, August 1987.

The city of Minot operates the sewer department as a utility enterprise. The sewer expense budgets for 1986 and 1987 were \$1,103,192 and \$1,094,251, respectively (City of Minot 1987 Annual Budget).

### **3.6.3 Solid Waste**

Solid wastes are disposed throughout the county in individual or public sanitary landfills. Minot AFB currently contracts for the removal of its solid waste for disposal to a landfill site. The city of Minot provides collection of refuse and disposal services within the city and in other contracted areas, and operates a sanitary landfill. The income generated from collection and disposal fees is projected in the 1987 annual budget as \$750,000.

### **3.6.4 Energy**

Electric energy is provided to the city of Minot and Minot AFB by the Northern States Power Company. Areas in Ward County outside the Northern States Power service area are served by Verendrye Electric Cooperative. Electricity purchases for Minot AFB are listed in Table 3-30.

Natural gas is provided in the Minot area by the Montana-Dakota Utilities Company. The Air Force uses natural gas to heat houses and other on-base facilities. Table 3-31 itemizes the fiscal 1986 natural gas purchases.

## **3.7 TRANSPORTATION**

Ward County and the city of Minot are served by Amtrak, Burlington Northern, and Soo Line railroads; U.S. highways 2, 52, and 83; and the Minot International Airport (Minot Area Development Corporation 1986). The Central Dakota and JB Shortway bus companies operate to provide intercity passenger and parcel service in Minot. In addition, American Freight System, ANR Freight System, Century Motor Freight, Janz Trucking, Koble & Sons Trucking, Lewis Truck Line, Midwest Motor Express, Rough Rider Trucking, Spains Transfer, and Twin City Freight operate in Minot.

## **3.8 RECREATION/TOURISM**

Recreational facilities are available within the city of Minot, and Ward County offers outdoor recreation activities. The Air Force provides recreational facilities at Minot AFB.

## **3.9 PUBLIC FINANCE**

Ward County and the city of Minot receive revenue through two main sources: (1) property taxes levied on the taxable valuations of the property within their respective jurisdictions, and (2) state aid through revenue sharing and the personal property payback funds. State highway funds are also a major contributor to county and city road budgets.

**Table 3-30**  
**MINOT AFB ELECTRICITY PURCHASES**  
*(Monthly Average)*

	<i>Kilowatt Hours (Thousands)</i>	<i>Cost/ 1,000 kWh</i>	<i>Cost</i>
Housing and Trailers	1,957	\$13.00	\$26,065
Base	4,003	\$13.87	\$55,524
Missile Facilities <sup>1</sup>	2,123	\$73.86	\$156,825
TOTAL	8,083		\$238,414
Annual Electricity Purchases			\$2,860,968

Note: 1. The extraordinarily high cost is due to the extension of transmission distance.

Source: Personal communication, Ken Cross, ACC, Minot AFB, August 1987.

**Table 3-31**  
**MINOT AFB NATURAL GAS PURCHASES**  
*(Monthly Average)*

	<i>Cubic Feet</i>	<i>Cost / 1,000 Cubic Feet</i>	<i>Cost</i>
Housing and Trailers	34,679,083	\$3.80	\$131,946
Base Heating Plant	48,248,833	\$3.68	\$177,508
TOTAL	82,927,916		\$309,454
Annual Natural Gas Purchases			\$3,713,976

Source: Personal communication, Ken Cross, ACC, Minot AFB, August 1987.

The personal property payback funds and revenue sharing are allocated within the state on the basis of a formula that includes the amount of sales taxes and state income paid within each jurisdiction. A reduction in the collection of those taxes may result in a reduction in the share of these funds allocated to the jurisdiction.

The major Ward County revenue sources are listed in Table 3-32. City of Minot revenue sources are shown in Table 3-33.

**Table 3-32**

**1987 WARD COUNTY BUDGET AND REVENUES**

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<b>Budget</b>	<b>\$9,679,037</b>
<b>Revenue</b>	
Property Taxes	4,016,507
State Aid	
Personal Property Pay Back	295,096
Revenue Sharing	350,000
Other	2,385,025
Miscellaneous	1,740,925
Cash Carryover	891,484

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Source: Ward County Budget and Revenue Summary, Ward County, 1987.

**Table 3-33**

**CITY OF MINOT BUDGET AND REVENUES 1987**  
**General Fund**

---

<b>Budget</b>	<b>\$6,512,318</b>
<b>Revenue</b>	
Property Taxes	\$1,835,714
State Aid	
Personal Property Pay Back	261,000
Revenue Sharing	600,000
Other	1,140,000
County Receipts	68,000
Miscellaneous	2,427,604
Cash Reserve	180,000

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Source: City of Minot 1987 Annual Budget.



#### **4.0 SOCIOECONOMIC IMPACTS OF INACTIVATING THE 5TH FIGHTER INTERCEPTOR SQUADRON**

This section presents the expected impacts of the proposed action in the context of the baseline characteristics described in section 3. The estimation of economic impacts is based on a detailed accounting of payroll expenditures and base-related purchases of services and supplies in the EIR. Definition of base expenditures and the calculation of total (direct and secondary) impacts are described in Appendix A. The impact estimation methodology (1987, revised) was adopted directly from the Economic Resources Impact Statement (ERIS). A questionnaire distributed to 5th Fighter Interceptor Squadron (FIS) personnel, described in Appendix B, provided information regarding the geographic distribution of population, housing, and education effects. A summary of the impacts is presented in section 5.

##### **4.1 POPULATION IMPACTS**

The direct impact of the proposed action on the population of the five-county region would be the out-migration of the 5th FIS personnel and their dependents. Approximately 91 percent of the unit, or 573 members, would be reassigned, and, including dependents, the estimated out-migration would total 1,437. The five-county region's population would be reduced by 1.6 percent, with the populations of Ward County and the city of Minot decreasing by 2.3 percent and 1.2 percent, respectively. An estimated 106 secondary workers could lose their jobs in the local area as a result of the inactivation (see Appendix A), though part of the secondary job loss may register in the local area as job-equivalent losses or reduced business revenue rather than actual job cutbacks.

Under worst-case assumptions, the 106 secondary employees and their dependents would leave the economic impact region (EIR). Using the average household size of 2.77 for each worker, the number of people who might leave the area as an indirect result of the inactivation would total 294. The total direct and indirect population reduction would then stand at 1,731, or 1.93 percent of the total EIR population.

Table 4-1 summarizes population impacts within the EIR. The geographic distribution of the population indirectly affected by the 5th FIS is based on the distribution of the directly affected population. Ward County would experience the greatest decrease in population. In the worst case, approximately 2.7 percent of the people residing in the area would leave as a result of the inactivation. The City of Minot and the five-county region would both experience a population loss of approximately 1.9 percent. The effects of such a population change on other socioeconomic resources are considered in following sections.

##### **4.2 EMPLOYMENT IMPACTS**

Potential employment impacts of the proposed inactivation of the 5th FIS include the loss of direct (Air Force-related) and secondary jobs in the EIR. Appendix A describes the estimated secondary job impacts. Based on the geographic distribution of employment discussed in section 3.2, it is assumed that all employment impacts will take place within Ward County.

**Table 4-1**  
**POPULATION IMPACTS OF INACTIVATING THE 5TH FIS**

	<i>Total Baseline</i>	<i>Direct Reduction<sup>1</sup></i>	<i>Indirect Reduction<sup>2</sup></i>	<i>Total Reduction</i>	<i>Percent Change</i>
City of Minot	32,843	380	274	654	1.99
Ward County	61,400	1,400	277	1,677	2.73
Five-County EIR	89,900	1,437	294	1,731	1.93

**Notes:** 1. Permanent party and BOS personnel and their dependents.  
2. The geographic distribution of indirect workers is based on proportions derived from the known distribution of direct workers.

**Source:** URS Corporation, 1987.

Almost all of the direct personnel associated with the 5th FIS will be reassigned to other bases. According to the questionnaire distributed to unit personnel (see Appendix C), roughly 9 percent of the 5th FIS personnel will remain in the EIR. It is assumed that these workers will either retire or quickly find other local employment. Consequently, there are no expected direct employment impacts.

The number of indirect jobs lost in the EIR is estimated at 106. Table 4-2 shows the effects of this impact if the lost jobs were exclusively in Ward County. Assuming these workers are unemployed for a certain period, the county unemployment rate could rise slightly from the current 6.8 percent to 7.2.

Some portion of the indirect jobs lost because of the proposed action could currently be held by the spouses or children of base personnel. Forty-five percent of 5th FIS personnel indicated that one or more persons in their household was employed at least part-time. Thus, the number of local unemployed workers could be considerably less than the total 106 estimated.

#### **4.3 INCOME IMPACTS**

Total income impacts of the proposed action include the direct base-related payrolls associated with the 5th FIS, and the indirect payrolls associated with the secondary employment impact discussed in the previous section.

Direct payroll impacts in the EIR are shown in Table 4-3. These are gross payrolls, and have not been adjusted for withholding or expenditures outside of the EIR. Direct payroll impacts in the EIR are estimated at \$4,979,451. Base operating support (BOS) staff payroll was estimated using composite wage rates, as shown in Table 4-4.

Estimates of indirect payroll impacts are a function of the estimated loss of 106 indirect jobs. Assuming that these are service jobs with an average (1986) salary of \$14,016, the estimated indirect payroll impact would be \$1,485,696.

Total income impacts of the proposed action are presented in Table 4-5. Total earnings loss in Ward County would be \$19.8 million, or 3.6 percent of total 1984 earnings. This same loss is 2.6 percent of the total earnings in the EIR.

#### **4.4 HOUSING IMPACTS**

Impacts on the housing market in the EIR are based on the number of households expected to leave the area following the proposed action. Direct and indirect impacts are considered in this analysis.

Direct housing impacts are measured in terms of the number of households of 5th FIS personnel leaving the EIR. These people will leave houses and apartments off base and will vacate military family housing on base. Thus, the local housing market will suffer the loss both of families leaving the area and of families moving from off-base local housing to on-base military family housing. Currently, there is a six-month wait for on-base housing. Indirect impacts will occur if workers indirectly related to the 5th FIS and their families leave the EIR after losing their jobs. Table 4-6 shows the distribution of 5th FIS by type of residence.

**Table 4-2**  
**EMPLOYMENT IMPACTS OF INACTIVATING THE 5TH FIS**  
**Ward County**

	<i>Baseline<sup>1</sup></i>	<i>With the Proposed Action<sup>2</sup></i>
Labor force	25,870	25,870
Employment	24,104	23,998
Unemployment	1,766	1,872
Unemployment rate	6.8	7.2

**Notes:**

1. Ward County baseline as of 1985. Does not include military employment.
2. Reduction in indirect jobs due to reduced military spending in the local economy. The total reduction would be 106 jobs. As a result of the 630 5th FIS and BOS jobs lost, 91 percent of the personnel would relocate to a new base. The remaining 9 percent are assumed to be reassigned to another unit at Minot AFB or to retire; there is no military unemployment.

**Source:** 1987 Annual Planning Report, Job Service North Dakota, December 1986; URS Corporation, 1987.

**Table 4-3**  
**PAYROLL OF THE 5TH FIS PERSONNEL**  
**(FY 1986)**

	<i>PPE</i> <sup>1</sup>	<i>BOS</i> <sup>2</sup>	<i>Total</i>
<b>Military:</b>			
On Base	11,305,657	712,675	12,018,332
Off Base	5,247,281	335,377	5,582,658
Civilian	321,878	438,915	760,793
<b>TOTAL</b>	<b>16,874,816</b>	<b>1,486,967</b>	<b>18,361,784</b>

**Notes:** 1. Reported by Ken Cross SAC/ACC.  
2. BOS payrolls estimated in Table 4.4

**Table 4-4**  
**5TH FIS BOS GRADE AND PAYROLL ESTIMATES**  
**(FY 1986)**

<i>Grade</i>	<i>Estimated Departing</i> <sup>1</sup>	<i>Estimated Reassignment</i>	<i>Total</i>	<i>Composite Rate (\$1986)</i>	<i>Gross Payroll</i>
E7	1	1	2	\$34,647	\$69,294
E6	2	1	3	29,352	88,056
E5	7	3	10	24,357	243,570
E4	10	5	15	20,378	305,670
E3	16	6	22	17,521	341,462
CIV	11	4	15	29,261	438,915
<b>TOTAL</b>	<b>47</b>	<b>20</b>	<b>67</b>		<b>\$1,486,967</b>

**Notes:** 1. Discussions with MSgt. Shawver, TACMET and MSgt. Hanes, SACMET indicate that 67 total BOS are assigned to 5th FIS. 47 of these positions have been eliminated by SAC. The remaining 20 are expected to be reassigned to the ALCM/5th MMS mission at Minot AFB. In this assessment, the total 67 positions are considered the BOS deactivation impact, and the 20 ALCM positions are considered an offsetting impact.  
2. Composite rates without PCS are taken from AFR 173-13.

**Table 4-5**  
**EARNINGS IMPACTS OF INACTIVATING THE 5TH FIS**  
**(\$1986)**

	<i>Total 1984 Earnings<sup>1</sup></i>	-----PROPOSED ACTION <sup>2</sup> -----			<i>% 1984 Earnings</i>
		<i>Direct Earnings</i>	<i>Indirect Earnings</i>	<i>Total Earnings</i>	
Ward County	551,834,451	18,361,784	1,485,696	19,847,480	3.6
Five-County EIR	751,027,893	18,361,784	1,485,696	19,847,480	2.6

**Notes:** 1. Earnings are comprised of wages and salaries, other labor income, and proprietors income. Military and agriculture earnings are included in this estimate.  
2. Direct and indirect earnings have not been adjusted for withholding or consumption outside the EIR.  
**Source:** U.S. Department of Commerce, Bureau of Economic Analysis.

**Table 4-6**  
**TYPE OF RESIDENCE OF 5TH FIS PERSONNEL<sup>1</sup>**

<i>Personnel</i>	<i>Own Home</i>	<i>Rental</i>	<i>MFH</i>	<i>Dorm</i>	<i>Total</i>
Leaving EIR	65	124	236	145	570
Remaining	34	3	15	8	60
TOTAL	99	127	251	153	630

**Note:** 1. Estimates are based on the URS survey and on discussions with Dennis Hagel, 91 CSG/DEH.

Among the 570 personnel leaving the EIR, an estimated 65 own homes, 124 rent, and 236 live in military family housing. An estimated total of 425 households (including 236 which will shift from off-base to Military Family Housing) will leave the local housing market.

Table 4-7 shows the potential direct, indirect, and total reduction in households following the inactivation of the 5th FIS. If the families leaving the five-county EIR are limited to direct workers, the estimated loss will be 1.3 percent of all households in the region. The loss increases slightly to 1.6 percent if the households of indirect workers are included. Table 4-8 indicates that overall vacancy rates in the city of Minot would increase from 8.9 to 10.9 percent with the loss of both direct and indirect families.

Given the increase in the number of vacant housing units, the proposed inactivation would have an adverse impact on the housing market in the EIR. Real estate prices, which have remained fairly stable over the past several years, may decrease because of the increased supply of housing stock. For example, in June, 1987, there were 581 homes listed for sale in Minot. The addition of the 65 homes owned by 5th FIS-related personnel could, in the worst case, increase the number of homes on the market by 13 percent -- an increase likely to exert a considerable downward pressure on prices in the absence of changes in demand.

#### **4.5 COMMUNITY SERVICES**

##### **4.5.1 Education**

The impact on public schools from the loss of students would result in a reduction of Federal Education Impact Aid funds and state aid to the district. The inactivation of the 5th FIS and the concomitant out-migration of families would reduce the number of students eligible for federal education impact funding by an estimated 262 students. Of this number, 208 live on base, and 54 live off base (interview, Capt. R. A. Leathers, ACC, Minot AFB, July 1987). The Minot public school system spring enrollment is shown in Table 4-9.

Using cost data for the fiscal 1986 Federal Education Impact Aid funds, the impact on the Minot public school system is estimated at \$289,854. Table 4-10 details the impact estimates. The public school system is further supported by state aid, which is based on daily attendance and other factors. Currently, state aid is \$1,400 per student. The loss of students due to the inactivation of the 5th FIS would reduce this funding source by \$366,800. The state-aid formulas recognize impacts due to loss of students, such as those caused by the inactivation of the 5th FIS, but school enrollment in the Minot public school system is not expected to drop sufficiently to trigger such funding considerations since increases in other students are likely to maintain enrollment levels. As a result, increased state aid is not anticipated. The total impact on funding is estimated at \$656,654 (\$289,854 from federal education impact aid and \$366,800 from state aid). The total educational impact of the proposed action for the Minot Public School District is shown in Table 4-11. An estimated 3 percent of total students would leave the district, and state and federal impact aid would be reduced by 3.9 percent.

Table 4-7

## HOUSEHOLD IMPACTS OF INACTIVATING THE 5TH FIS

	<i>Total Baseline<sup>1</sup></i>	<i>Direct Reduction<sup>2</sup></i>	<i>Percent Change</i>	<i>Indirect Reduction<sup>3</sup></i>	<i>Total Reduction</i>	<i>Percent Change</i>
City of Minot	14,101	183	1.3	99	282	2.0
Ward County <sup>3</sup>	21,381	417	2.0	100	517	2.4
Five-county region <sup>3</sup>	33,030	425	1.3	106	531	1.6

- Notes:**
1. Includes all housing: rentals and single-family units.
  2. Includes 189 permanent-party and BOS 5th FIS households. Also includes 236 households moving on base to fill vacancies created by departure of 5th FIS personnel.
  3. Indirect reduction is based on the worst-case assumption that 106 indirect workers and their families would leave the EIR. The geographic distribution of indirect workers is based on proportions derived from the known distribution of direct workers as of 1980.

**Source:** URS Corporation, 1987.

Table 4-8

IMPACT ON TOTAL VACANCY OF INACTIVATING THE 5TH FIS  
City of Minot

Baseline vacant units <sup>1</sup>	1,266
5th FIS vacant units <sup>2</sup>	282
Total vacant units	1,548
Baseline vacancy rate	8.98%
Vacancy rate with impact	10.98%
Change in vacancy rate	+2.00

- Notes:**
1. Includes all housing: rentals and single-family dwellings.
  2. Includes direct permanent-party and BOS 5th FIS "backfill" (i.e., members filling on-base vacancies created by the departure of the 5th FIS) and indirect impacts.

**Source:** URS Corporation, 1987.



Table 4-9

**1986 PUBLIC SCHOOL SPRING ENROLLMENT**  
**Minot Public School System**

<i>Elementary Schools</i>	<i>Enrollment</i>	<i>5th FIS Students<sup>1</sup></i>
Bel Aire	340	6
Dakota <sup>2</sup>	727	94
Edison	542	4
Jefferson	170	
Lincoln	192	
Longfellow	335	4
McKinley	160	
North Hill	468	10
North Plains <sup>2</sup>	624	44
Perkett	251	
Roosevelt	166	2
Sunnyside	306	
Washington	313	
<b>TOTAL ELEMENTARY ENROLLMENT</b>	<b>4,594</b>	<b>164</b>
<i>Junior High Schools (Grades 7-8)</i>		
Memorial <sup>2</sup>	266	29
Jim Hill	373	
Erik Ramstad	557	6
<b>TOTAL JUNIOR HIGH ENROLLMENT</b>	<b>1,196</b>	<b>35</b>
<i>High Schools</i>		
Central Campus (Grades 9-10)	1,105	19
Magic City Campus (Grades 11-12)	1,022	23
<b>TOTAL HIGH SCHOOL ENROLLMENT</b>	<b>2,127</b>	<b>42</b>
<b>TOTAL MINOT PUBLIC SCHOOLS</b>	<b>7,917</b>	<b>241</b>
<i>Other Public Schools</i>		
Deering (K-12)	64	15
Glenburn Elementary	NA	2
Glenburn High School	320	4
<b>TOTAL OTHER SCHOOLS</b>		<b>21</b>
<b>TOTAL ALL SCHOOLS</b>		<b>262</b>

**Notes:** 1. Results of a survey of 5th FIS personnel extrapolated to total students.  
 2. On-base school

**Source:** Dr. Robert Mundy, Superintendent of Public Schools, Minot Public School District, Minot, August 1987.

Table 4-10

**POTENTIAL LOSS OF STUDENTS AND REVENUE RESULTING  
FROM THE INACTIVATION OF THE 5TH FIS  
Five-County EIR**

<i>Student Category</i>	<i>Impact Funds</i>	<i>Number</i>	<i>Total Impact</i>
<b>Federal Impact Aid:</b>			
Living On Base	\$1,430.50	208	\$297,544
Living Off Base	\$22.65	54	\$747
Living Off Base, Deering and Glenburn	\$207.48	21	\$4,357
<b>SUBTOTAL</b>		<b>283</b>	<b>\$302,648</b>
<b>Less Gramm-Rudman 4.3% Adjustment</b>			<b>\$12,794</b>
<b>TOTAL FEDERAL IMPACT AID</b>			<b>\$285,973</b>
<b>TOTAL STATE IMPACT AID</b>			<b>\$366,800</b>
<b>TOTAL</b>			<b>\$656,654</b>

Table 4-11

**POTENTIAL LOSS OF STUDENTS AND REVENUE RESULTING  
FROM THE INACTIVATION OF THE 5TH FIS  
Minot Public School District**

	<i>Total District</i>	<i>5th FIS</i>	<i>Percent</i>
Students	7,917	241	3.0
State and Federal Aid	\$16,737,582	\$635,691	3.9

Source: URS Corporation, 1987.

While the total projected impact may reduce school funding, the Minot school system could also reduce its operating costs. This would be accomplished by reducing teaching staff, which is likely to take place in proportion to the decline in enrollment. However, this offset would depend on the grade levels and schools attended by the affected students. Distribution of the students may be such that their relocation would not reduce individual classroom size sufficiently to warrant a decrease in the number of classes and instructional or other staff.

#### **4.5.2 Fire Protection**

There would be negligible impacts on the ability of the community and the county to provide fire protection due to the inactivation of the 5th FIS.

#### **4.5.3 Police Protection**

There would be negligible impacts on the ability of the community and the county to provide police protection due to the inactivation of the 5th FIS.

#### **4.5.4 Hospital Services**

Hospital services may be impacted by the inactivation of the 5th FIS. The Air Force currently purchases supplemental hospital services locally. A reduced number of military personnel and dependents at Minot AFB would reduce the need to purchase the previous level of services. At the same time, the development of a new medical facility on the base may reduce the need for these locally purchased services without regard to the inactivation of the 5th FIS.

#### **4.5.5 Transit Services**

The inactivation of the 5th FIS would have a negligible impact on the City of Minot bus service.

### **4.6 UTILITIES**

#### **4.6.1 Water**

The proposed action may impact the sale of water by the Minot Water Department. Minot AFB purchased about \$618,000 of water in fiscal year 1986. The amount of this water consumed by the operations of the 5th FIS has not been quantified. Should base housing become unoccupied from the action, water sales may further be reduced. It is anticipated that base housing would continue to be occupied, mitigating that impact on water sales.

#### **4.6.2 Wastewater**

There will be no impact on the community wastewater facilities. Minot AFB processes its own wastewater, and thus, would not impact other systems.

#### **4.6.3 Solid Waste**

The inactivation of the 5th FIS would have a beneficial impact by reducing the amount of solid waste that may need to be disposed.

#### **4.6.4 Power**

The impact on power sales due to the operations of the 5th FIS has not been quantified. Power requirements for building lighting may not be diminished if the buildings are occupied by other activities. Similarly, power requirements for housing will not be diminished if the housing is reoccupied both on and off base.

#### **4.7 TRANSPORTATION**

The impact on transportation if the 5th FIS is inactivated would be negligible.

#### **4.8 RECREATION/TOURISM**

The impact of the proposed action would be insignificant on recreation and tourism within the EIR.

#### **4.9 PUBLIC FINANCE**

The impact of the inactivation of the 5th FIS on public finance is likely to be small. A significant proportion of the local government revenue is from property taxes, and reduction of personnel on the base and in the community will not likely have an impact on taxable property values. State personal property payback funds and state revenue sharing funds are allocated on the basis of the sales tax and state income tax paid within the jurisdiction. A reduction of income spent in the community on taxable sales and the reduction of taxable income due to the proposed action may, however, result in the reduction of the relative share of state grants and funds allocated to the EIR.

## **5.0 SOCIOECONOMIC IMPACTS OF THE AIR LAUNCH CRUISE MISSILE (ALCM) MISSION**

This section briefly explains the socioeconomic impacts that would accompany deployment of the ALCM at Minot Air Force Base (AFB). Payroll expenditures and procurements related to the new mission would partially offset losses due to the inactivation of the 5th Fighter Interceptor Squadron (FIS). The economic resource impact statement methodology used for estimating economic impacts is described in Appendix A. Application of the method and estimated results for ALCM are presented in Appendix B.

### **5.1 POPULATION IMPACTS**

The ALCM mission would bring a substantial number of personnel and their dependents into the local area. Assigned military and civilian personnel, including base operating support (BOS) and Site Activation Task Force (SATAF) staff, would total 158. The direct population impact would be 395, based on an average household size of 2.5 for families living on base. While the future residential patterns of the ALCM families are unknown, it is likely they will reside largely in Ward County, with 60 to 70 percent living on base. No indirect population impacts would be expected.

### **5.2 EMPLOYMENT IMPACTS**

Potential employment impacts of ALCM include additional direct (Air Force-related) jobs and secondary jobs in the economic impact region. Appendix B describes the calculation of secondary job impacts. Direct jobs will total 158, and an estimated 27 secondary jobs will be created. Most of these secondary jobs are believed to be service or trade-related positions which can be easily filled with the existing work force.

### **5.3 INCOME IMPACTS**

Gross ALCM payroll inputs would be an estimated \$4.2 million (\$1986), of which an estimated \$1.2 million would be spent in the five-county region. The gross payroll impact of the 27 secondary jobs is estimated at \$378,432, assuming an average annual salary of \$14,016.

### **5.4 HOUSING IMPACTS**

Potential housing impacts of ALCM are based on the number of households expected to move into the local area. The potential distribution of ALCM households among housing types can be estimated using the proportions reported for the 5th FIS. A total of 158 households, including single servicemen, are expected to move into the local area. As a result, demand for housing will increase by approximately 18 for owner-occupied homes, 34 for rental units, 65 for Military Family Housing units, and 40 for on-base dormitory units. No indirect housing impacts would be expected.

## **5.5 COMMUNITY SERVICES IMPACTS**

The demand for community services will increase with the population growth accompanying the ALCM mission. For example, the number of students related to the ALCM mission is estimated to be 73, based on the average number of students per household for the 5th FIS. Similar per capita-based estimates can be made for other community services.

## **6.0 CONCLUSIONS**

This section summarizes the conclusions drawn from the baseline conditions and estimated impacts of each of the socioeconomic areas. A number of areas had no appreciable impacts and are not discussed.

### **6.1 SUMMARY OF THE ECONOMIC ENVIRONMENT**

The Minot area and the encompassing five-county region have experienced a slight economic decline beginning in the early 1980s. Falling commodities prices, a world-wide surplus of petroleum, and a regional decline in railroad activity have reduced employment, depressed earnings, and encouraged out-migration. The Minot area is making a promising transition from mining, transportation, and agriculture industries to retail trade and services, but the city and the five-county region remain heavily dependent on revenue from Minot Air Force Base (AFB).

### **6.2 CONCLUSIONS REGARDING POPULATION, INCOME, AND UNEMPLOYMENT**

- o The inactivation of the 5th Fighter Interceptor Squadron (FIS) would reduce base employment by 630 persons.
- o This reduction would diminish direct off-base payroll and procurement expenditures by \$7,499,764 in the five-county economic impact region (EIR).
- o The secondary job loss in Ward County is estimated to be 106, with the preponderance of jobs lost in the city of Minot.
- o Total earnings in Ward County (including military and agricultural) would be reduced by 3.6 percent in Ward County and 2.6 percent in the EIR.
- o Unemployment within Ward County could increase slightly, from 6.8 to 7.2 percent. It is assumed that employment impacts will be concentrated in Ward County.
- o Population losses (direct and indirect) are projected to be 654 in the city of Minot, 1,677 in Ward County, and 1,731 in the overall EIR.

### **6.3 CONCLUSIONS REGARDING HOUSING**

- o A survey of the 5th FIS showed that a total of 570 personnel will be leaving the EIR. An estimated 65 households reside in owner-occupied homes, 124 households rent off base, 236 live in military family housing (MFH), and 145 live in base dormitories.
- o An estimated 425 households will leave the local housing market: 189 5th FIS members and 236 families moving to MFH.

- o The overall vacancy rate in the city of Minot would increase by approximately 2.0 percentage points, assuming that workers losing secondary jobs would leave.

#### **6.4 CONCLUSIONS REGARDING EDUCATION**

- o Potential impacts in the EIR include the loss of 262 students and \$656,654 in federal and state aid.
- o Potential impacts specifically for the Minot public school district will include a loss of 241 students and \$635,691 in federal and state aid.

#### **6.5 CONCLUSIONS REGARDING AIR LAUNCH CRUISE MISSILE (ALCM)**

The transfer of an ALCM squadron to Minot AFB will be completed by March, 1988. This will add 113 assigned and 20 base operating support (BOS) members to the base population. The Site Activation Task Force team responsible for phasing in the ALCM mission will contribute an additional 25 people through 1989. The payroll and procurement impacts of the ALCM mission will partially offset the negative impacts of the inactivation of the 5th FIS.

- o The new mission will bring an estimated \$1.8 million in payroll and procurement expenditures into the EIR.
- o Base-related secondary jobs will increase by 27.
- o Demand for local housing will increase by 52 households.

#### **6.6 SUMMARY OF 5TH FIS AND ALCM IMPACTS**

Table 6-1 summarizes the impacts of the 5th FIS inactivation and the ALCM deployment.



Table 6-1

**SUMMARY OF THE SOCIOECONOMIC IMPACTS OF THE INACTIVATION  
OF THE 5TH FIS AND THE DEPLOYMENT OF ALCM  
Five-County Region**

	Total Baseline	5th FIS (%)	ALCM (%)	Net Change to the EIR (%)
Population <sup>1</sup>	89,900	-1,731 (-1.9)	470 (0.5)	-1,261 (-1.4)
Employment				
Base related	N/A <sup>2</sup>	-630	158	-472
Secondary	25,870	-106 (-0.4)	27 (0.1)	-80 (-0.3)
Gross earnings				
Base related <sup>3</sup>				
Secondary				
Total	751,027,893	-18,361,784 -1,485,696 -\$19,847,480 (-2.6)	\$4,255,601 378,432 \$4,634,033 (0.6)	-\$14,106,183 -1,107,264 -\$15,213,447 (-2.0)
Housing demand (units) <sup>4</sup>	33,030	-425 (-1.2)	79 (0.2)	-346 (-1.0)
Education (students) <sup>5</sup>	7,917	-241 (-3.0)	73 (0.1)	-168 (-2.0)

**Notes:** 1. Includes direct and secondary impacts for the EIR. The total ALCM population impacts are  $395 + (27 \times 2.77) = 4.70$ .

2. Military employment not included in civilian baseline labor force.

3. Figures include retirement and other employer contributions made to active duty personnel.

4. Includes "backfill" of households moving on base as a result of the departure of the 5th FIS. Total ALCM housing impacts include secondary workers remaining in the EIR ( $52 + 27$ ).

5. Minot Public Schools only.

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## APPENDICES

## **Appendix A -- Economic Impacts of 5th Fighter Interceptor Squadron (FIS) Inactivation**

### **1.1 THE ECONOMIC IMPACTS OF THE INACTIVATION OF THE 5TH FIS AT MINOT AIR FORCE BASE**

Inactivation of the 5th FIS will end a variety of expenditures occurring in the local Minot area, in Ward County, and in the five-county economic impact region (EIR). The total impact of these expenditures is the sum of direct impacts, such as purchases by base personnel and procurements by the commissary and exchange, and secondary impacts (indirect and induced expenditures) impacts initiated by the direct effect.

Most of the purchases and procurements making up the direct impacts within the EIR occur in the city of Minot or in Ward County, though the total economic activity generated by these expenditures will be estimated using multipliers defined for the five-county EIR.

### **1.2 DIRECT ECONOMIC IMPACTS**

The direct economic impacts of the 5th FIS consist of payroll expenditures for assigned and base operating support (BOS) personnel, civilian health care (CHAMPUS) payments, education impact funds, local temporary duty (TDY) expenditures, unit-related local expenditures by the commissary, base exchange (BX), and a portion of the services and supplies procured by the base contracts office. The 5th FIS recently completed a construction program to support its conversion from F-106 to F-15 aircraft. Subsequently, no forgone construction expenditures by the 5th were considered. Table A-1 shows Military Construction Program (MCP) expenditures by Tactical Air Command (TAC) from 1980 to 1989.

#### **1.2.1 Off-Base Payroll Expenditures**

Military and civilian payrolls are not made up entirely of disposable income. A significant portion of the payroll reported by Accounts Control may include retirement, medicare, and social security contributions not readily available to spend. The payroll totals shown in Table A-2 have been adjusted using a .721 factor for military personnel and a .898 factor for civilians.

Income available to base personnel is not spent entirely in the EIR. A large portion of payrolls are accounted for by personal taxes, savings, or purchases made outside the EIR. Another portion is spent on base. The proportion of income spent within the EIR varies for military personnel, and is lowest for personnel living on base. This proportion, the average propensity to consume within the EIR, is .30 for military personnel on-base, .50 for military personnel off-base and .55 for civilians. These factors are reported in the base fiscal 1986 economic resource impact statement (ERIS), and are taken from a study by Gunther (1982). Table A-2 shows a total payroll impact of \$4,981,472 in the EIR.

**Table A-1**

**MCP CONSTRUCTION, FISCAL 1980-1989**  
*(expressed in millions of nominal dollars)*

<i>Fiscal Year</i>	<i>Minot AFB</i>	<i>5th FIS</i>
1980	\$4.30	
1981	.63	
1982	5.37	3.32 <sup>1</sup>
1983		
1984	10.41	5.41 <sup>2</sup>
1985	25.17	2.76
1986	7.67	
1987	25.67	
1988	9.00	
1989	4.0	

**Notes:** 1. Includes F-106 flight simulator, hush house, and storage igloos.  
2. Covers F-15 conversion, including a new warehouse and hangar.

**Source:** Bob Bossert, base civil engineer's office.



**Table A-2**  
**ADJUSTED PAYROLL IMPACTS OF THE 5TH FIS**  
**(FY 1986)**

	<i>PPE</i> <sup>1</sup>	<i>BOS</i> <sup>2</sup>	<i>Total</i>	<i>Adjusted</i> <sup>3</sup>	<i>Five-County Impact</i> <sup>4</sup>
<b>Military:</b>					
On Base	11,305,657	712,675	12,018,332	8,653,199	2,595,959
Off Base	5,247,281	335,377	5,582,658	4,019,514	2,009,757
Civilian	321,878	438,915	760,793	683,192	375,756
<b>TOTAL</b>	<b>16,874,816</b>	<b>1,486,967</b>	<b>18,361,783</b>	<b>13,355,905</b>	<b>4,981,472</b>

- Notes:**
1. Reported by Ken Cross, SAC/ACC.
  2. Estimates of BOS staff are explained in Table 4-4.
  3. Gross payrolls from accounts control include retirement, social security, and medicare contributions not immediately available as income. Gross income payrolls are multiplied by .721 for military personnel and .898 for civilians to estimate disposable income. The adjustments are specified in a 6 September 1985 letter to all MAJCOMs from Lt. Baseman, AFHQ/ACM.
  4. The average proportion of income spent within the EIR is .30 for military personnel living on base, .50 for military personnel living off base, and .55 for civilian personnel. These estimates are based on a survey by Gunther, November 1982.

### **1.2.2 Civilian Health Care (CHAMPUS) Payments**

CHAMPUS permits military retirees and dependents of active-duty personnel to use civilian medical care when required services are not available from military facilities. CHAMPUS payments are reported for a 40-mile radius around the base hospital or clinic, an area somewhat smaller than the EIR. The supplemental/cooperative program is similar to CHAMPUS, and provides civilian care for military personnel. Health care payments for fiscal 86 related to the 5th FIS are a fraction of the base total estimated using the units proportion of total personnel. Total local health care expenditures were reported in the ERIS as \$1,406,245. Multiplied by 9.6 percent (630/6561), the estimated expenditures are \$135,000.

### **1.2.3 Education Impact Funds**

The Minot public school district receives, for each base-related child, Federal Education Impact Aid and state aid from North Dakota. The total aid lost with the departure of children related to the 5th FIS is an estimated \$656,654. Education impacts are discussed in detail in section 4.5.1.

### **1.2.4 Off-base TDY Expenditures**

The specific amount of local off-base expenditures by personnel on TDY assignments with the 5th FIS is not available. However, total off-base TDY expenditures for fiscal 1986 were estimated by the base billeting office to be \$136,492. Multiplying the total amount by the base population proportion of the 5th (9.6 percent) gives an estimated impact of \$13,103.

### **1.2.5 Commissary Expenditures**

The base commissary made wholesale purchases of approximately \$10.2 million in 1986. According to the commissary manager, a substantial amount of commissary purchases were made from a number of local vendors. Table A-3 shows the major local vendors and their sales, totaling \$956,597, to the commissary. The estimated reduction in these purchases attributable to the inactivation of the 5th FIS is calculated using the 9.6 percent population proportion of the 5th FIS. The estimated impact is \$91,833.

### **1.2.6 Base Exchange Expenditures**

The Minot base exchange had total retail sales of \$12.5 million in fiscal 1986, and over 50 percent of those sales was merchandise purchased from local vendors. The BX manager calculated the retail value of merchandise purchased in Ward County to be \$6,923,000. The wholesale value of these purchases (78 percent of retail) is \$5,399,940, and the estimated portion of sales attributable to the 5th FIS is 9.6 percent, or \$518,394.

### **1.2.7 Services Expenditures**

The base contracting office indicated that the total services purchased for fiscal 86 was \$12,794,670. Table A-4 lists a number of the largest service contracts. Many firms providing services to Minot are located outside the EIR. However, a large

**Table A-3**

**LOCAL VENDORS USED BY THE MINOT AFB COMMISSARY  
(FY 1986)**

<i>Vendor</i>	<i>Amount</i>
Nash Finch Grocers	\$184,717
Northern Bottling	180,646
Coca-Cola Bottling	165,497
Frito-Lay	148,577
Interstate brands (bakery)	146,220
Coca-Cola Foods	86,705
Bob and Jim's Doughnuts	44,235
TOTAL	\$956,597

Sources: Mr. Lady, commissary manager; Ken Cross, ACC.

**Table A-4**

**MAJOR SERVICE CONTRACTS AT MINOT AFB  
(FY 1986)**

<i>Service</i>	<i>Amount</i>
MFH maintenance	\$1,323,154
Food service	1,111,013
Refuse collection	283,799
Laundry and dry cleaning	274,607
Hospital and house cleaning	257,170
Custodial services	215,347
Commissary stocking	206,000
Aircraft maintenance	144,000
Packing and crating	101,823
Postal service	57,311
Hospital laundry	9,647

Source: M.Sgt. King, Base Contracting, Minot AFB.

**Table A-5**

**MAJOR MATERIALS AND SUPPLIES CONTRACTS AT MINOT AFB  
(FY 1986)**

<i>Materials/Supplies</i>	<i>Amount</i>
Construction supplies	1,600,000
Auto parts	624,580
Dental supplies	183,900
Medical equipment	63,490
Security vehicles	27,368

Source: M.Sgt. King, Base Contracting, Minot AFB.

portion of the contract amounts are spent on local labor and materials. For example, the firm providing Military Family Housing maintenance is based in the Denver area, but employs local tradesmen to actually do the work. Because of the local expenditures inherent in almost all service contracts, all service expenditures are considered impacts in the EIR. There is no way to identify the specific service expenditures related with the 5th FIS. Use of the base population proportion of the 5th FIS (9.6 percent) provides an estimated figure of \$1,228,288.

#### **1.2.8 Materials and Supplies Expenditures**

These expenditures totaled \$28.5 million in 1986, including \$9.5 million in minor construction. The contracting office reported \$5,463,937 in materials and supplies purchased in the Minot area. Table A-5 lists major materials and supplies contracts. The amount related to the 5th FIS was estimated using the base population proportion of the 5th; 9.6 percent of the total is \$524,538.

### **1.3 TOTAL ECONOMIC IMPACTS**

The total economic impact of the proposed inactivation is calculated using the ERIS methodology. This procedure is used annually by all CONUS Air Force facilities to estimate the local economic activity generated and jobs created by Air Force base expenditures.

Quickly summarized, the ERIS approach employs an economic base gross income multiplier to estimate the total (primary and secondary) economic impact of direct expenditures within a 50-mile radius of the base. Estimates of secondary impacts for the trade and service and wholesale sectors are divided by sales-per-worker ratios to calculate the secondary jobs created. The ERIS methodology is described in detail in the Economic Resource Impact Statement (ERIS) Handbook distributed by SAF/ACCE.

The direct impacts of the 5th FIS inactivation used in the ERIS calculations are summarized in Table A-6. The variable names in the 4th column correspond to the equations and impact calculations in Table A-7.

**Table A-6**  
**INACTIVATION OF THE 5th FIS**  
**SUMMARY OF DIRECT IMPACTS**

<i>Impact</i>	<i>Total</i>	<i>Ad justments</i>	<i>Local Amount</i>	<i>Variable Name</i>
<b><u>Gross Payroll:</u></b>				
Military on base	\$12,018,232	0.72 x 0.30	\$2,595,959	
Military off base	5,582,658	0.72 x 0.50	2,009,757	
Civilian	760,793	0.898 x 0.55	375,756	
Total payroll expenditures off base in the EIR			\$4,981,472	RPAY
<b><u>Services:</u></b>				
Total services	1,228,288	0.524 <sup>a</sup> x 0.55	353,993	
Commissary	91,833		91,833	
BX	518,394		518,394	
Education	656,654		656,654	
Health	135,000		135,000	
TDY	13,103		13,103	
Total labor and service expenditures off base in the EIR			1,768,977	RCONS
<b><u>Materials, equipment, and supplies:</u></b>				
Total services	1,228,288	0.183 <sup>b</sup>	224,777	
Materials and supplies	524,538		524,538	
Total materials, equipment, and supplies expenditures in the EIR			749,315	RMAT
<b>TOTAL 5TH FIS EXPENDITURES IN THE EIR (RPAY + RCONS + RMAT)</b>			<b>7,499,764</b>	<b>RTOT</b>

**Notes:** a. Labor share of services.  
b. Materials, equipment, and supply share of services.

**Source:** URS Corporation, 1987.

Table A-7

INACTIVATION OF THE 5th FIS  
ECONOMIC IMPACT CALCULATIONS

- 
1. Total economic impact in the EIR of expenditures related to the 5th FIS:

$$\begin{aligned} \text{TEI} &= \text{RTOT} \times M^a \\ \$13,968,372 &= 7,499,764 \times 1.864 \\ &= \$13,979,560 \end{aligned}$$

2. Secondary jobs off base in the EIR related to expenditures of the 5th FIS:

$$\begin{aligned} \text{SJ} &= \frac{\text{RPAY} \times (M-1)}{P_{RS}^b} + \frac{\text{RCONS} \times M}{P_{RS}^b} + \frac{\text{RMAT} \times M}{P_W^b} \\ &= \frac{4,981,472(0.864)}{75,360} + \frac{1,764,996(1.864)}{75,360} + \frac{749,315(1.864)}{274,080} \\ &= 57 + 44 + 5 \\ &= 106 \end{aligned}$$


---

Notes: a. Gross-income multiplier for the five-county EIR was provided by SAF/ACCE.  
b. Sales-per-worker ratios for the five-county EIR was provided by SAF/ACCE.

Source: URS Corporation, 1987.

## **APPENDIX B -- Economic Impacts of the Air Launch Cruise Missile (ALCM) Deployment**

### **1.1 ECONOMIC IMPACTS OF THE DEPLOYMENT OF THE ALCM/5TH MMS AT MINOT AIR FORCE BASE**

The deployment of the ALCM by the 5th Munitions Maintenance Squadron (MMS) at Minot AFB would increase payroll expenditures and procurements in the five-county region. As Table B-1 indicates, base personnel would increase by 158. The economic impacts of the ALCM deployment are estimated in the same manner as described in Appendix A.

### **1.2 DIRECT AND TOTAL ECONOMIC IMPACTS**

With the exception of payrolls, the direct economic impacts of the ALCM deployment are unknown. Payroll expenditures were estimated using composite pay rates, as shown in Table B-2. Other expenditures are estimated using the proportion of ALCM personnel to the total base population (158/6561, or 2.4 percent). All construction in support of the ALCM mission will be completed by deployment, thus no construction impacts are considered. The direct impacts of the ALCM deployment are summarized in Table B-3. The total economic impact and secondary jobs created are estimated in Table B-4.



**Table B-1**  
**ALCM/5TH MMS GRADE AND PAYROLL ESTIMATES**  
**(FY 1986)**

Grade	PPE <sup>1</sup>	BOS <sup>2</sup>	SATAP <sup>3</sup>	Total Personnel	Composite Rate <sup>4</sup> (1986 \$)	Gross Payroll
O5			2	2	78,864	157,728
O4			4	4	66,807	267,228
O3			1	1	54,608	54,608
E8	3			3	44,531	133,593
E7	6	1	1	8	38,292	306,336
E6	9	1	4	14	32,595	456,330
E5	21	3		24	27,229	653,496
E4	21	5		26	23,150	601,900
E3	53	6		59	19,270	1,136,930
GS5			1	1	19,276	19,276
CIV		4	12	16	29,261	468,176
TOTAL	113	20	25	158		4,255,601

- Notes:**
1. Reported by S.Sgt. Wright, SAC/MET.
  2. Estimates of BOS staff are explained in Table 4-4.
  3. Reported by S.Sgt. Wright, SAC/MET.
  4. Composite rates without PCS are taken from AFR 173-13.

Table B-2

ADJUSTED PAYROLL OF THE ALCM/5TH MMS  
(FY 1986)

	PPE <sup>1</sup>	BOS <sup>2</sup>	SATAF <sup>3</sup>	Total	Adjusted <sup>4</sup>	Five-county Impact <sup>5</sup>
Military <sup>6</sup>						
On base	1,805,740	253,403	427,836	2,486,979	1,793,112	537,934
Off base	930,229	130,541	220,400	1,281,170	923,724	461,862
Civilian		117,044	370,408	487,452	437,732	240,753
TOTAL	2,735,969	500,988	1,018,644	4,255,601	3,154,568	1,240,549

Notes:

1. Reported by S.Sgt. Wright, SAC/MET.
2. Estimates of BOS staff are explained in Table 4-4.
3. Reported by S.Sgt. Wright, SAC/MET.
4. Gross payrolls from accounts control include retirement, social security, and medicare contributions not immediately available as income. Gross income payrolls are multiplied by .721 for military personnel and .898 for civilians to estimate disposable income. The adjustments are specified in a 6 September 1985 letter to Maj. Coms from Lt. Baseman, AF/ACM.
5. The average proportion of income spent within the EIR is .30 for military personnel living on base, .50 for military personnel living off base, and .55 for civilian personnel. These estimates are based on a survey by Gunther, November 1982.
6. The geographic distribution of personnel is based on results of the 5th FIS survey.

**Table B-3**  
**DEPLOYMENT OF THE ALCM/5th MMS**  
**SUMMARY OF DIRECT IMPACTS**

<i>Impact</i>	<i>Total</i>	<i>Adjustments</i>	<i>Local Amount</i>	<i>Variable Name</i>
<b><u>Gross Payroll:</u></b>				
Military on base	\$2,486,979	0.721 x 0.30	\$537,934	
Military off base	1,281,170	0.721 x 0.50	461,862	
Civilian	487,452	0.898 x 0.55	240,753	
Total payroll expenditures off base in the EIR			\$1,240,549	RPAY
<b><u>Services:</u></b>				
Total services	307,072	0.524 <sup>a</sup> x 0.55	88,498	
Commissary	22,958		22,958	
BX	129,599		129,599	
Education <sup>c</sup>	163,482		163,482	
Health	33,750		33,750	
TDY	3,276		3,276	
Total labor and service expenditures off base in the EIR			441,563	RCONS
<b><u>Materials, equipment, and supplies:</u></b>				
Total services	307,072	0.183 <sup>b</sup>	56,194	
Materials and supplies	131,134		131,134	
Total materials, equipment, and supplies expenditures in the EIR			187,328	RMAT
TOTAL ALCM EXPENDITURES IN THE EIR (RPAY + RCONS + RMAT)			1,869,440	RTOT

**Notes:**

- a. Labor share of services.
- b. Materials, equipment, and supply share of services.
- c. School-age dependents were estimated using known proportions from the 5th FIS survey.

**Source:** URS Corporation, 1987.

Table B-4

DEPLOYMENT OF THE ALCM/5th MMS  
ECONOMIC IMPACT CALCULATIONS

- 
1. Total economic impact in the EIR of expenditures related to the 5th FIS:

$$\begin{aligned} \text{TEI} &= \text{RTOT} \times M^a \\ \$3,484,636 &= 1,869,440 \times 1.864 \\ &= \$3,484,636 \end{aligned}$$

2. Secondary jobs off base in the EIR related to expenditures of the 5th FIS:

$$\begin{aligned} \text{SJ} &= \frac{\text{RPAY} \times (M-1)}{P_{RS}^b} + \frac{\text{RCONS} \times M}{P_{RS}^b} + \frac{\text{RMAT} \times M}{P_W^b} \\ &= \frac{1,240,549(0.864)}{75,360} + \frac{441,563(1.84)}{75,360} + \frac{187,328(1.864)}{274,080} \\ &= 14 + 11 + 2 \\ &= 27 \end{aligned}$$


---

Notes: a. Gross-income multiplier for the five-county EIR was provided by SAF/ACCE.  
b. Sales-per-worker ratios for the five-county EIR was provided by SAF/ACCE.

Source: URS Corporation, 1987.

## **Appendix C-- Questionnaire Distributed to 5th Fighter Interceptor Squadron (FIS) Personnel**

The questionnaire was distributed to personnel of the 5th FIS during the week of August 3, 1987. Members of the 5th FIS were extremely prompt in completing the forms. Of the 521 questionnaires distributed, 254 were returned within four days. Attached are the frequency tabulations for each question in the questionnaire. "N/A" indicates that the question was not answered.

## EMPLOYEE QUESTIONNAIRE

### Minot Air Force Base

1. Where do you now live?
  - a. Name of Town \_\_\_\_\_
  - b. County \_\_\_\_\_
  - c. Zip Code \_\_\_\_\_
  - d. Do you own \_\_\_\_\_, rent \_\_\_\_\_, or live on-base \_\_\_\_\_?
  
2. If you are a civilian employee:
  - a. How long have you worked at Minot AFB? \_\_\_\_\_ (yrs)
  - b. What is your grade (i.e., GS-7, WG-10)? \_\_\_\_\_
  
3. If you are a military employee:
  - a. How long have you been serving in the military? \_\_\_\_\_ (yrs)
  - b. What is your rank? \_\_\_\_\_
  
4. How many people, including yourself, live in your household? \_\_\_\_\_
  
5. Is anyone else (spouse and other dependents) in your household employed?
 

Yes \_\_\_\_\_
No \_\_\_\_\_
Not Applicable \_\_\_\_\_

If yes; how many are employed,

Fulltime	Parttime	On-base	Off-base
_____	_____	_____	_____

If employed at Minot AFB, how many are in the military? \_\_\_\_\_
  
6. If your job were relocated to another base would you relocate to the new base, find a job in the Minot area, or retire? (Please check appropriate space):
 

Relocate to New Base	Retire	Find Another Job	Other (Please Specify)
_____	_____	_____	_____
  
7. If you own your home, please indicate the market value and the current mortgage balance by placing a check in the appropriate value range in each column:
 

Market Value		Mortgage Value
_____	Under \$20,000	_____
_____	\$20,000 to \$39,999	_____
_____	\$40,000 to \$59,999	_____
_____	\$60,000 to \$79,999	_____
_____	\$80,000 to \$99,999	_____
_____	\$100,000 to \$119,999	_____
_____	\$120,000 to \$139,999	_____
_____	over \$140,000	_____

This Questionnaire is Completely Anonymous

8. Please indicate the grade and school attended for any school age dependents in your household:

	Name of School	Grade Level
Child 1 (Oldest)	_____	_____
Child 2	_____	_____
Child 3	_____	_____
Child 4	_____	_____

9. Do you or any member of your family attend college? Please indicate the name of the college and the number of units taken:

Family Member	Name of College	Units
_____	_____	_____

10. Please indicate your total (gross) income range and the range for working members of your household by checking all appropriate columns in the table below:

	<i>Your Income</i>	<i>Spouse's Income</i>	<i>Other's Total Income</i>	<i>Total Household Income</i>
Under \$5,000	_____	_____	_____	_____
\$5,000 to \$9,999	_____	_____	_____	_____
\$10,000 to \$14,999	_____	_____	_____	_____
\$15,000 to \$19,999	_____	_____	_____	_____
\$20,000 to \$24,999	_____	_____	_____	_____
\$25,000 to \$29,999	_____	_____	_____	_____
\$30,000 to \$34,999	_____	_____	_____	_____
\$35,000 to \$39,999	_____	_____	_____	_____
\$40,000 to \$44,999	_____	_____	_____	_____
\$45,000 to \$49,999	_____	_____	_____	_____
\$50,000 to \$54,999	_____	_____	_____	_____
\$55,000 to \$59,999	_____	_____	_____	_____
Over \$60,000	_____	_____	_____	_____

11. What percentage of your yearly (gross) household income is spent on-base (BX, Commissary, etc.)? \_\_\_\_\_%
12. What percentage of your yearly (gross) household income is spent or sent outside Ward County for such things as mail-order merchandise, vacations, loan payments, or money sent to relatives or friends? \_\_\_\_\_%

**This Questionnaire is Completely Anonymous**

# FREQUENCY DISTRIBUTION OF QUESTIONNAIRE RESPONSES

var2: What is your ZIP code?

zip code	Freq.	Percent	Cum.
n/a	3	1.18	1.18
58701.	74	29.13	30.31
58702.	1	0.39	30.71
58704.	111	43.70	74.41
58705.	54	21.26	95.67
58709.	1	0.39	96.06
58731.	6	2.36	98.43
587041216.	1	0.39	98.82
587054976.	1	0.39	99.21
587055360.	1	0.39	99.61
587599680.	1	0.39	100.00
Total	254	100.00	

var3: Do you own, rent, or live on-base?

residence	Freq.	Percent	Cum.
own	39	15.35	15.35
rent	52	20.47	35.83
on-base	161	63.39	99.21
trailer	2	0.79	100.00
Total	254	100.00	



var4: If you are a civilian employee, how long have you worked at Minot AFB?

civilian, years at Minot	Freq.	Percent	Cum.
2.	1	0.39	0.39
3.	2	0.79	1.18
5.	2	0.79	1.97
7.	1	0.39	2.36
14.	1	0.39	2.76
18.	1	0.39	3.15
n/a	245	96.46	99.61
n/a	1	0.39	100.00
Total	254	100.00	

var5: What is your civilian grade?

civilian grade	Freq.	Percent	Cum.
1.	1	0.39	0.39
4.	1	0.39	0.79
5.	1	0.39	1.18
11.	5	1.97	3.15
n/a	245	96.46	99.61
n/a	1	0.39	100.00
Total	254	100.00	

var6: If you are a military employee, how long have you been in the military?

military, years in military	Freq.	Percent	Cum.
1.	15	5.91	5.91
1.25	3	1.18	7.09
1.5	10	3.94	11.02
1.60000002	1	0.39	11.42
1.75	1	0.39	11.81
2.	17	6.69	18.50
2.5	7	2.76	21.26
2.75	3	1.18	22.44
2.79999995	1	0.39	22.83
2.9000001	1	0.39	23.23
3.	26	10.24	33.46
3.5	4	1.57	35.04
4.	8	3.15	38.19
4.5	2	0.79	38.98
4.5999999	1	0.39	39.37
5.	11	4.33	43.70
6.	18	7.09	50.79
7.	11	4.33	55.12
7.5	3	1.18	56.30
8.	9	3.54	59.84
8.5	3	1.18	61.02
9.	8	3.15	64.17
9.25	1	0.39	64.57
9.5	1	0.39	64.96
10.	13	5.12	70.08
11.	6	2.36	72.44
11.5	1	0.39	72.83
12.	6	2.36	75.20
13.	8	3.15	78.35
14.	7	2.76	81.10
14.5	1	0.39	81.50
15.	8	3.15	84.65
15.5	1	0.39	85.04
16.	5	1.97	87.01
16.5	2	0.79	87.80
17.	3	1.18	88.98
18.	6	2.36	91.34
18.5	1	0.39	91.73
19.	5	1.97	93.70
20.	3	1.18	94.88
21.	2	0.79	95.67
21.5	1	0.39	96.06
25.	1	0.39	96.46
31.	1	0.39	96.85
n/a	8	3.15	100.00
Total	254	100.00	

var7: What is your military rank?

military rank	Freq.	Percent	Cum.
O 2	2	0.79	0.79
O 3	2	0.79	1.57
O 4	1	0.39	1.97
n/a	13	5.12	7.09
E 1	2	0.79	7.87
E 2	14	5.51	13.39
E 3	53	20.87	34.25
E 4	43	16.93	51.18
E 5	67	26.38	77.56
E 6	36	14.17	91.73
E 7	17	6.69	98.43
E 8	1	0.39	98.82
E 9	3	1.18	100.00
Total	254	100.00	

var8: How many people, including yourself, live in your household?

total people in household	Freq.	Percent	Cum.
0.	3	1.18	1.18
1.	46	18.11	19.29
2.	64	25.20	44.49
3.	41	16.14	60.63
4.	62	24.41	85.04
5.	17	6.69	91.73
6.	7	2.76	94.49
7.	3	1.18	95.67
10.	1	0.39	96.06
n/a	10	3.94	100.00
Total	254	100.00	

var9: Is anyone else in your household employed?

spouse or other employment	Freq.	Percent	Cum.
yes	111	43.70	43.70
no	87	34.25	77.95
not appl	47	18.50	96.46
n/a	9	3.54	100.00
Total	254	100.00	

var10: How many are employed fulltime?

employment, fulltime	Freq.	Percent	Cum.
1.	51	20.08	20.08
2.	5	1.97	22.05
3.	1	0.39	22.44
9.	1	0.39	22.83
n/a	196	77.17	100.00
Total	254	100.00	

var11: How many are employed part-time?

employment, parttime	Freq.	Percent	Cum.
1.	48	18.90	18.90
2.	2	0.79	19.69
n/a	204	80.31	100.00
Total	254	100.00	

var12: How many are employed on-base?

employment, on-base	Freq.	Percent	Cum.
1.	44	17.32	17.32
2.	2	0.79	18.11
3.	1	0.39	18.50
9.	1	0.39	18.90
n/a	206	81.10	100.00
Total	254	100.00	

var13: How many are employed off-base?

employment, off-base	Freq.	Percent	Cum.
1.	25	9.84	9.84
2.	1	0.39	10.24
9.	1	0.39	10.63
n/a	227	89.37	100.00
Total	254	100.00	

var14: Of those employed at Minot AFB, how many are in the military?

if employed at Minot, how many	Freq.	Percent	Cum.
0.	24	9.45	9.45
1.	58	22.83	32.28
2.	12	4.72	37.01
3.	1	0.39	37.40
4.	1	0.39	37.80
n/a	158	62.20	100.00
Total	254	100.00	

var15: If your job were relocated to another base, what would you do?

if inactivation , future plans	Freq.	Percent	Cum.
other	1	0.39	0.39
relocate	220	86.61	87.01
retire	6	2.36	89.37
find job	8	3.15	92.52
other	8	3.15	95.67
n/a	11	4.33	100.00
Total	254	100.00	

var16: If you own your own home, what is its market value?

market val of home	Freq.	Percent	Cum.
< 20,000	12	4.72	4.72
20k-39k	8	3.15	7.87
40k-59k	11	4.33	12.20
60k-79k	10	3.94	16.14
> 140k	1	0.39	16.54
99.	212	83.46	100.00
Total	254	100.00	

var17: If you own your own home, what is its current mortgage balance?

mortgage val of home	Freq.	Percent	Cum.
< 2,000	14	5.51	5.51
20k-39k	11	4.33	9.84
40k-59k	11	4.33	14.17
60k-79k	3	1.18	15.35
120k-139	1	0.39	15.75
n/a	214	84.25	100.00
Total	254	100.00	

var18: What schools do school age dependents attend?

name of school	Freq.	Percent	Cum.
Memorial	6	2.36	2.36
N Plains	11	4.33	6.69
MagicCit	7	2.76	9.45
MinotAFB	4	1.57	11.02
KiddidKo	3	1.18	12.20
DakotaEl	20	7.87	20.08
Central	5	1.97	22.05
Bel Air	2	0.79	22.83
MinotHS	4	1.57	24.41
EdisonEl	2	0.79	25.20
DeeringE	4	1.57	26.77
LynchEmm	2	0.79	27.56
Roosevel	1	0.39	27.95
Ramstad	1	0.39	28.35
N. Hill	1	0.39	28.74
BishopRy	1	0.39	29.13
GlenbrnH	1	0.39	29.53
n/a	179	70.47	100.00
Total	254	100.00	

var19: What grade are they in?

grade level	Freq.	Percent	Cum.
kinderga	10	3.94	3.94
1.	7	2.76	6.69
2.	7	2.76	9.45
3.	10	3.94	13.39
4.	3	1.18	14.57
5.	7	2.76	17.32
6.	7	2.76	20.08
7.	3	1.18	21.26
8.	8	3.15	24.41
9.	6	2.36	26.77
10.	2	0.79	27.56
11.	6	2.36	29.92
12.	6	2.36	32.28
n/a	172	67.72	100.00
Total	254	100.00	

var20: What schools do school age dependents attend?

name of school	Freq.	Percent	Cum.
Memorial	6	2.36	2.36
N Plains	8	3.15	5.51
MinotAFB	1	0.39	5.91
KiddidKo	2	0.79	6.69
DakotaEl	14	5.51	12.20
Central	3	1.18	13.39
Bel Air	1	0.39	13.78
MinotHS	1	0.39	14.17
Sunnysid	1	0.39	14.57
DeeringE	2	0.79	15.35
LynchEmm	1	0.39	15.75
Ramstad	2	0.79	16.54
N. Hill	1	0.39	16.93
BishopRy	1	0.39	17.32
Glenbrr4	1	0.39	17.72
n/a	208	81.89	99.61
n/a	1	0.39	100.00
Total	254	100.00	

var21: What grade are they in?

grade level	Freq.	Percent	Cum.
kinderga	6	2.36	2.36
1.	6	2.36	4.72
2.	3	1.18	5.91
3.	4	1.57	7.48
4.	2	0.79	8.27
5.	6	2.36	10.63
6.	4	1.57	12.20
7.	6	2.36	14.57
8.	7	2.76	17.32
9.	2	0.79	18.11
10.	2	0.79	18.90
n/a	206	81.10	100.00
Total	254	100.00	



var22: What schools do school age dependents attend?

name of school	Freq.	Percent	Cum.
Memorial	2	0.79	0.79
N Plains	2	0.79	1.57
DakotaEl	7	2.76	4.33
DeeringE	1	0.39	4.72
N. Hill	2	0.79	5.51
Longfell	1	0.39	5.91
GlenbrnE	1	0.39	6.30
n/a	238	93.70	100.00
Total	254	100.00	

var23: What grade are they in?

grade level	Freq.	Percent	Cum.
kinderga	3	1.18	1.18
1.	2	0.79	1.97
2.	2	0.79	2.76
3.	5	1.97	4.72
5.	3	1.18	5.91
7.	2	0.79	6.69
n/a	237	93.31	100.00
Total	254	100.00	

var24: What schools do school age dependents attend?

name of school	Freq.	Percent	Cum.
DakotaEl	2	0.79	0.79
DeeringE	1	0.39	1.18
N. Hill	1	0.39	1.57
Longfell	1	0.39	1.97
n/a	249	98.03	100.00
Total	254	100.00	

var25: What grade are they in?

grade level	Freq.	Percent	Cum.
kinderga	1	0.39	0.39
1.	3	1.18	1.57
3.	1	0.39	1.97
n/a	248	97.64	99.61
n/a	1	0.39	100.00
Total	254	100.00	

var26: What family member attends college?

family member in college	Freq.	Percent	Cum.
wife	11	4.33	4.33
self	12	4.72	9.06
husband	5	1.97	11.02
n/a	226	88.98	100.00
Total	254	100.00	

var27: What college do they attend?

name of college	Freq.	Percent	Cum.
MinotStU	30	11.81	11.81
URegina	1	0.39	12.20
CCAF	6	2.36	14.57
NDSSS	2	0.79	15.35
UND	1	0.39	15.75
n/a	214	84.25	100.00
Total	254	100.00	

var28: How many units have they taken?

Units	Freq.	Percent	Cum.
1.	2	0.79	0.79
2.	3	1.18	1.97
3.	5	1.97	3.94
4.	4	1.57	5.51
5.	1	0.39	5.91
6.	2	0.79	6.69
12.	3	1.18	7.87
13.	1	0.39	8.27
15.	1	0.39	8.66
20.	3	1.18	9.84
22.	1	0.39	10.24
24.	1	0.39	10.63
27.	1	0.39	11.02
36.	1	0.39	11.42
44.	1	0.39	11.81
45.	1	0.39	12.20
n/a	222	87.40	99.61
120.	1	0.39	100.00
Total	254	100.00	

var29: What is your income?

your income	Freq.	Percent	Cum.
< 5,000	1	0.39	0.39
5k-9k	34	13.39	13.78
10k-14k	100	39.37	53.15
15k-19k	63	24.80	77.95
20k-24k	23	9.06	87.01
25k-29k	9	3.54	90.55
30k-34k	6	2.36	92.91
35k-39k	1	0.39	93.31
40k-44k	2	0.79	94.09
45k-49k	1	0.39	94.49
n/a	14	5.51	100.00
Total	254	100.00	

var30: What is your spouse's income?

spouse's income	Freq.	Percent	Cum.
< 5,000	40	15.75	15.75
5k-9k	19	7.48	23.23
10k-14k	20	7.87	31.10
15k-19k	13	5.12	36.22
20k-24k	10	3.94	40.16
45k-49k	1	0.39	40.55
n/a	151	59.45	100.00
Total	254	100.00	

var31: What is the total income for anyone else who works in your household?

other's total income	Freq.	Percent	Cum.
< 5,000	3	1.18	1.18
5k-9k	2	0.79	1.97
10k-14k	2	0.79	2.76
15k-19k	1	0.39	3.15
20k-24k	1	0.39	3.54
30k-34k	2	0.79	4.33
40k-44k	1	0.39	4.72
n/a	242	95.28	100.00
Total	254	100.00	

var32: What is your total household income?

total household income	Freq.	Percent	Cum.
< 5,000	1	0.39	0.39
5k-9k	10	3.94	4.33
10k-14k	33	12.99	17.32
15k-19k	22	8.66	25.98
20k-24k	25	9.84	35.83
25k-29k	10	3.94	39.76
30k-34k	14	5.51	45.28
35k-39k	5	1.97	47.24
40k-44k	4	1.57	48.82
45k-49k	2	0.79	49.61
50k-54k	1	0.39	50.00
55k-59k	2	0.79	50.79
> 60k	1	0.39	51.18
n/a	124	48.82	100.00
Total	254	100.00	

var33: What percentage of your yearly gross household income is spent on-base?

% of hh income spent on-base	Freq.	Percent	Cum.
0.	4	1.57	1.57
.050000001	1	0.39	1.97
1.	5	1.97	3.94
2.	3	1.18	5.12
3.	4	1.57	6.69
5.	22	8.66	15.35
7.	1	0.39	15.75
10.	32	12.60	28.35
15.	12	4.72	33.07
20.	34	13.39	46.46
25.	25	9.84	56.30
30.	25	9.84	66.14
35.	10	3.94	70.08
40.	18	7.09	77.17
42.	1	0.39	77.56
45.	3	1.18	78.74
50.	16	6.30	85.04
52.	1	0.39	85.43
60.	4	1.57	87.01
70.	1	0.39	87.40
75.	4	1.57	88.98
80.	8	3.15	92.13
85.	1	0.39	92.52
90.	1	0.39	92.91
n/a	16	6.30	99.21
100.	1	0.39	99.61
n/a	1	0.39	100.00
Total	254	100.00	

var34: What percentage of your yearly gross household income is spent or sent outside of Ward County?

% of hh inc spnt out of WardCou	Freq.	Percent	Cum.
0.	9	3.54	3.54
1.	10	3.94	7.48
2.	2	0.79	8.27
3.	2	0.79	9.06
4.	3	1.18	10.24
5.	29	11.42	21.65
8.	1	0.39	22.05
9.	1	0.39	22.44
10.	40	15.75	38.19
15.	14	5.51	43.70
20.	21	8.27	51.97
25.	20	7.87	59.84
29.	1	0.39	60.24
30.	17	6.69	66.93
35.	5	1.97	68.90
40.	17	6.69	75.59
45.	3	1.18	76.77
50.	20	7.87	84.65
55.	1	0.39	85.04
60.	8	3.15	88.19
61.	1	0.39	88.58
65.	4	1.57	90.16
70.	4	1.57	91.73
75.	4	1.57	93.31
80.	1	0.39	93.70
85.	1	0.39	94.09
90.	1	0.39	94.49
n/a	14	5.51	100.00
Total	254	100.00	